City of Auburn Annex

King County Regional Hazard Mitigation Plan

April 22, 2013

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Foreword

The City of Auburn as been an active participant in the King County Regional Hazard Mitigation Plan process, having formally adopted that plan for the first time in 2004. The City sincerely appreciates the cooperation and support of those agencies and jurisdictions that have contributed to the body of knowledge required to complete that plan and its jurisdiction specific annexes, including this one.

Coordination of, and participation in, the King County Regional Hazard Mitigation Plan represents a committed and concerted effort on behalf of all member jurisdictions to maintain compliance with applicable state and federal laws, as well as to actively work to safeguard and improve the built environment for our residents and businesses.

The Hazard Mitigation Plan is one of many efforts to prepare all people in the City for emergencies and disasters. This Annex is formatted to be a part of the King County Regional Hazard Mitigation Plan, but also takes into account that portion of the City that is incorporated in Pierce County. The hazard and vulnerabilities analyses of both counties were taken into consideration when creating this Annex. This annex improves our ability to minimize the impacts of emergencies and disasters on people, property, economy, and the environment of the City of Auburn.

The Hazard Mitigation Plan is designed to identify long-term strategies for reducing or eliminating the long-term risk to human life and property from hazards. Though these strategies can be implemented before, during, or after an incident, it has been demonstrated that hazard mitigation is most effective when based on an inclusive, comprehensive, long-term plan that is developed before a disaster occurs. This plan is not intended to guide response related activities, except as those activities may interface with mitigation strategies identified in this plan.

Dennis Dowdy
Public Works Director & Director of Emergency Management
City of Auburn

Letter of Promulgation

To all Recipients:

With this notice, we are pleased to officially promulgate the 2013 City of Auburn Annex to the King County Regional Hazard Mitigation Plan. It is intended to provide a structure and methodology for local and regional hazard mitigation opportunities that are designed to safeguard lives, property, economic interests, and the environment for all residents.

Every effort has been made to ensure that this Annex is compatible with both the King and Pierce County Hazard Mitigation Plans and all applicable state and federal laws. It will be revised and updated as required by the Disaster Mitigation Act of 2000. All recipients and interested parties are invited to provide recommendations for improvements to future updates of the Plan to the City of Auburn Emergency Management Division.

This Annex and the King County Regional Hazard Mitigation Plan are adopted pursuant to City of Auburn Resolution No. 4926 by the City Council of the City of Auburn, Washington at its regularly scheduled meeting on April 15, 2013.

Peter B. Lewis
Mayor
City of Auburn

City of Auburn Community Profile

The City of Auburn was platted in 1886, incorporated in 1891 and is located in the southern Puget Sound area of the State of Washington, approximately 20 miles south of Seattle. Auburn has an area of approximately 29.83 square miles, with approximately 28.17 square miles located in King County and approximately 1.66 square miles located in Pierce County. The City of Auburn first annexed into Pierce County in 1998 by Ordinance No. 5089 and has incrementally expanded since. The City lies at the south end of State Route 18, at its intersection with State Route 167. Mount Rainier lies approximately 55 miles to the southeast of the City. The diverse geography presents a need for consideration in all hazard mitigation plan planning efforts and influences the probability of landslides, floods, and earthquakes and volcano/lahar events.

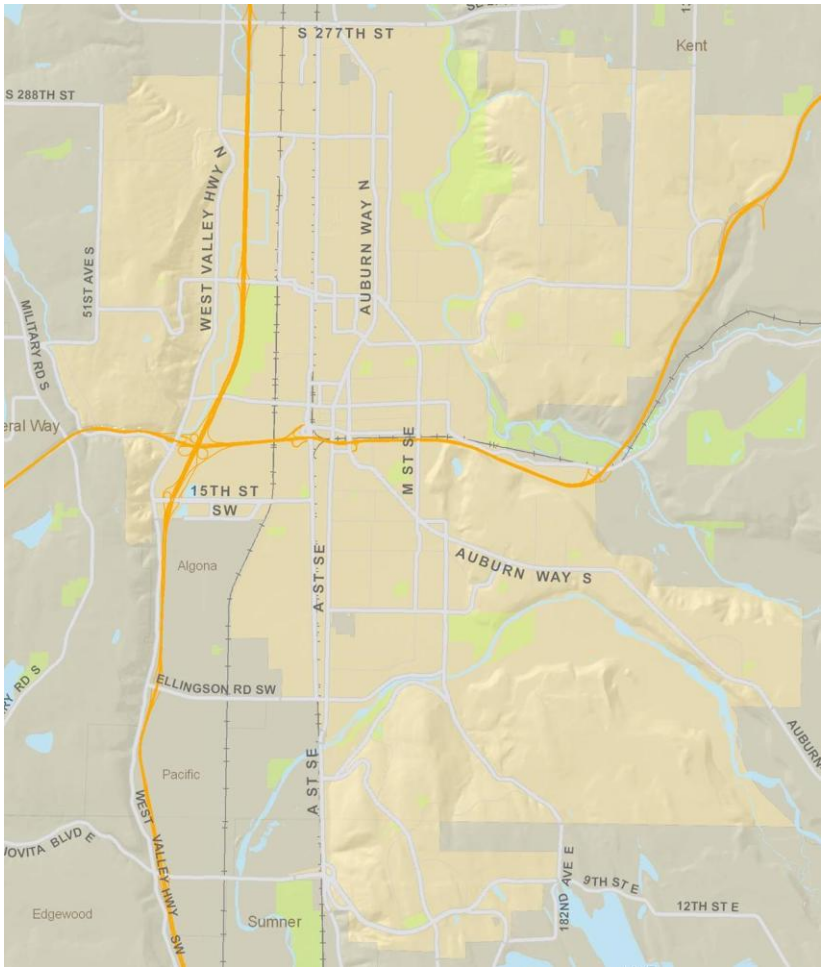


Figure 1: City of Auburn Map

The topography includes the centrally located, north-south Green River Valley, as well as the West Hill, East Hill, and Southeast plateaus. The City is part of two watersheds that flow to Puget Sound; the northern portion of the City occurs within the Green-Duwamish Watershed (Water Resource Inventory Area (WRIA) 9) and the southern portion lies within the Puyallup-White Watershed (Water Resource Inventory Area (WRIA) 10). The City boundaries include the Green and White Rivers, Bowman, Mill and Olson Creeks and as well as numerous small streams throughout the City.

Population Profile

According to the 2010 Washington State Office of Financial Management (OFM) population projections, approximately 70,180 individuals reside within the City of Auburn, with approximately 63,380 of these living in the King County portion (89%) and 7,800 in the Pierce County portion (11%) with a diversity index of 55.1%.

Muckleshoot Indian Tribe

The Muckleshoot Indian Tribe (MIT) was established in 1874, and is comprised of the descendants of the area's original Coast Salish peoples, and is located both inside and outside the city limits of Auburn. The Muckleshoot Reservation consists of six sections situated diagonally, has 20 miles of boundaries, and encompasses six square-miles. Three sections (3 square miles) are within the municipal limits of the City of Auburn. Many of the landowners within the reservation boundaries are not tribal members over which the city has authority. The sections located outside the City are mostly surrounded by farms and rural areas, with urbanization encroaching on the western portion. The Muckleshoot Tribe is one of Washington's largest tribes, with a membership of about 3,300. Through the Indian Reorganization Act, the Tribe adopted its constitution in 1936. It provides a nine-member council with advice and input of the General Council, comprised of all community members, provides a full range of governance services to tribal members and tribal properties within the reservation.

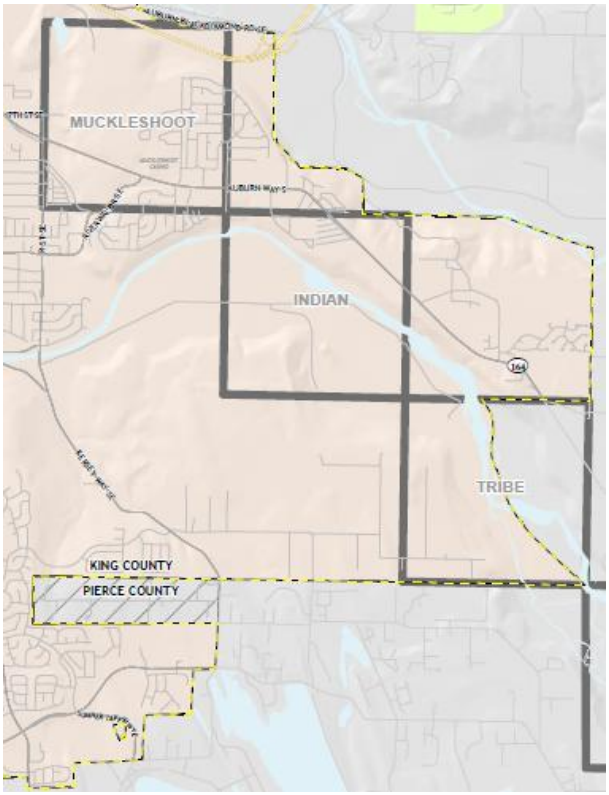


Figure 2: Muckleshoot Indian Tribe Land

City Governance

The City of Auburn is a non-charter code city retaining the council-mayor form of government, as provided in the Revised Code of Washington (RCW) 35A.02.030 of the Optional Municipal Code for the state. A Mayor and seven council members serve the City of Auburn. The City Council is responsible for setting City policies as well as reviewing and approving Auburn's Hazard Mitigation Plan Annex.

The City is organized into the following departments

- Administration
- Finance
- Human Resources, Risk and Property Management
- Innovation and Technology
- Legal
- Parks, Arts and Recreation

Planning, and Development
Police
Public Works

Utility Providers

The City's approved water service boundary includes the majority of the City except areas at the periphery on the east side, at the northeast corner and the south, which are served by Lakehaven Water District, Water District No. 111 and Bonney Lake Water, respectively.

The City provides the following services, which include wholesale customers:

Potable water
Sanitary sewer (collection system only)
Storm sewer services
3,050 total water connections

Various entities provide other utilities within the City, such as Puget Sound Energy (electric/gas), Comcast/Infinity (cable), and QWEST/Century Link (telephone).

Emergency Services

Valley Regional Fire Authority - The Valley Regional Fire Authority (VRFA) began providing services for the Cities of Auburn, Algona, and Pacific starting January 1, 2007. The Valley Regional Fire Authority provides fire, rescue, and emergency medical services, hazardous materials response, and fire inspection services.

King County Flood Control District - The King County Flood District was formed by Ordinance No. 15728 of the Metropolitan King County Council in April 2007. A Board of Supervisors composed of the nine County Council members oversees the Flood Control District. With the formation of this countywide district, ten previously existing flood control districts spread across the County were dissolved. One of these was the former Green River Flood Control District that included Auburn; it is one of the two districts which were active at the time of the creation of the King County Flood Control District.

The District implements the King County Flood Hazard Management Plan, enacted by the King County Council in January 2007. The Plan identifies up to $345 million in priority repairs and upgrades, including work on flood containment levees and bank stabilization projects. Additionally, it provides for a regional flood-warning center and emergency response, flood facility maintenance, public education and outreach, mapping, technical studies, and mechanisms for citizen inquiry and public response.

Boeing Fire Department - The Boeing Airplane Company operates a private fire department in multiple locations at their company facilities with a structural/hazmat fire station located at the Boeing Plant in Auburn.

Law Enforcement - The City of Auburn has an accredited full service police department with over 110 authorized full-time employees: 100 commissioned staff and 17 non-commissioned

staff. The city contracts with South Correctional Entity (SCORE), a cooperative multijurisdictional misdemeanant incarceration effort by the cities of Auburn, Burien, Des Moines, Federal Way, Renton, SeaTac and Tukwila.

Emergency Management - In 2007, the City established an Emergency Management Division headed by the Chief of Police as Director of Emergency Management and an Emergency Operations Board composed of the Mayor, Chief of Police and all department heads. The Director of Emergency Management appoints an Emergency Preparedness Manager to direct and coordinate the development, implementation, and maintenance of the emergency operations plan as the chairperson of the Emergency Management Committee (Ordinance No. 6088). This Division of the City did not exist at the time of preparation of the City's previous Hazard Mitigation Plan in 2004. The Emergency Management Division was reorganized under the Public Works Department and the Public Works Director was appointed as the Director of Emergency Management effective February 19, 2013 (Ordinance No. 6428).

Public Health - Portions of the City of Auburn are located within King and Pierce Counties and thus services are provided to the respective areas by the Seattle-King County Health Department and the Tacoma-Pierce County Health Department. Both agencies serve city and unincorporated areas.

Hospitals - Emergency Care – Multicare Auburn Medical Center is a certified Level-III Trauma Center with 149 beds that cares for approximately 32,000 patients annually. Two urgent care facilities, 3 nursing homes, 4 assisted living/boarding homes, and 28 adult family homes are also located in Auburn.

Critical Facilities & Infrastructure - Critical facilities are those that support government and first responders' ability to take action in an emergency. They are a top priority in any comprehensive hazard mitigation plan. A matrix has been created that includes a list of facilities and/or structures that have been determined to be critical in nature, including structures, or facilities that would seriously affect not only the quality of life in Auburn, but also the sustainability and survivability of City residents.

Critical Facilities include:

- Essential facilities, which are necessary for the health and welfare of an area and are essential during the response and recovery phase of a disaster such as: governmental facilities, public safety facilities, schools;
- Transportation systems such as arterial roads;
- Facilities that if damaged could result in serious impacts to public health and welfare;
- Lifeline utility systems such as: potable water, waste water facilities, power grid and communications systems.

The complete list of Critical Facilities is contained in a confidential Appendix A, at the end of this Annex.

Existing Plans and Policies

The City of Auburn established its land use pattern with adoption of the Comprehensive (Land Use) Plan in 1986. The Plan was amended to comply with the Growth Management Act (GMA) in April 1995 and is updated annually. The overall urban form of the City is heavily influenced by its location in a river valley surrounded by relatively steep hillsides. The organization of the land

use pattern of the plan separates the City into three areas: the regional serving area (Western portion of Auburn) which is a concentration of employment base; the community serving area (Eastern Auburn) which contains a majority of the residential areas and locally oriented businesses; and the Downtown which uniquely serves both the region and local community. The western, eastern, and southern expansion of the city boundaries since 2004 has continued to add mainly residential areas. In 2004 Auburn's downtown was designated an "Urban Center" pursuant to the King County Countywide Planning Policies (CPPS). Urban Centers are areas with concentrated housing and employments, supported by high capacity transportation systems and retail, recreational, public facilities parks and open space. Much of the county's growth in employment and a significant share of new housing are focused within urban centers.

The City's development regulations, which include zoning, closely align with and implement the land use designations of the Comprehensive (Land Use) Plan. The zoning regulations are periodically updated. The City adopted its Critical Areas Ordinance in compliance with GMA in May 2005 (Ordinance No. 5894) to provide for the identification, regulation and protection of environmentally sensitive areas including wetlands, streams, wildlife habitat, geologic hazard areas, groundwater protection areas, and flood hazard areas. The city updated its floodplain regulations, Chapter 15.68 of the City code in 2008 (Ordinance No. 6161) and updated its Shoreline Management Program in April 2009 (Ordinance No. 6235) in compliance with the State Shoreline Management Action RCW 90.58. The Green and White Rivers are subject to the shoreline regulations.

City of Auburn Legal & Regulatory Capabilities Matrix

	Natural Hazards								Technical Hazards		
	Drought	Earthquake	Flood	Landslide	Severe Weather	Tsunami / Seiche	Volcano	Fire	Dam Failure	Auburn Airport	Hazardous Materials
Comprehensive (Land Use) Plan		X	X	X					X	X	X
Capital Improvement Plan	X	X	X		X						
Public Works Design Standards	X	X	X	X	X						
Comprehensive Emergency Management Plan (CEMP)	X	X	X	X	X	X	X	X	X	X	X
Business License Regulations (Title 5)											X
Health and Safety (Title 8)	X	X	X	X	X	X	X	X	X	X	X
Public Peace Morals and Welfare (Title 9) *Emergency Powers.	X	X	X	X	X	X	X	X	X	X	X
Vehicles and Traffic (Title 10)											
Streets, Sidewalks & Public Works (Title 12)		X		X	X						
Waters, Sewers and Public Utilities (Title 13)	X		X		X						X
Buildings and Construction (Title 15)	X	X	X	X	X						
Environment (SEPA, Shoreline & CAO) (Title 16)		X	X	X	X		X				

	Natural Hazards								Technical Hazards		
	Drought	Earthquake	Flood	Landslide	Severe Weather	Tsunami / Seiche	Volcano	Fire	Dam Failure	Auburn Airport	Hazardous Materials
Land Adjustments and Divisions (Title 17)			X								
Zoning (Title 18)											
Comprehensive Transportation Plan 2007											
Comprehensive Water Plan	X										
Comprehensive Sewer Plan											
Comprehensive Storm Drainage Plan			X		X						
Parks, Arts and Recreation Plan											
Elevation Certificates			X								
Flood Insurance Studies			X								
Airport Master Plan										X	
Airport Emergency Plan										X	X

Figure 3: City of Auburn Legal and Regulatory Capabilities Matrix

Mitigation Strategy

The City of Auburn participated in the King County Multi-Jurisdictional Regional Hazard Mitigation Plan process. (Appendix J) As a result, Auburn's goals are in compliance and agreement with King County's goals, specifically:

- Protect Life and Property
- Support Emergency Services
- Increase Public Awareness
- Preserve Natural Systems and Resources
- Encourage Partnerships
- Enhance Planning Activities

The City is committed to working regionally to achieve mitigation goals as well as to develop and complete initiatives and projects locally.

Ongoing Mitigation Effort

The City of Auburn has a long history of taking appropriate mitigation activities to protect people, property, and the environment. Highlights of past and current actions include:

- Ensuring that Auburn's codes are current and enforced.
- Implementing strategies for the maintenance, repairs, upgrades, and replacement of city-owned buildings and infrastructure. Including:

  - Completed storm drainage projects such as replacing and upgrading storm water pipes and adding stormwater infiltration and water quality facilities at 21st Street SE.
  - Constructed stormwater detention facilities at the Auburn Municipal Airport to reduce likelihood and duration of localized flooding.
  - Upgraded all infrastructure in downtown core around City Hall.
- Improving and maintaining a National Flood Insurance Program (NFIP) Community Rating System (CRS) Class 7 rating to a class 5 rating. This includes cleaning and maintaining facilities, providing capital improvements, and providing public education with King County, the City of Kent, and other regional partners.
- Developing and exercising emergency response plans locally & regionally.

Mitigation Activities Following the Submittal of the 2004 Hazard Mitigation Plan Annex

Formation of Emergency Management Division – Ordinance No. 6088

In 2007, the City passed Ordinance No. 6088, which established an Emergency Management Division within the City's administration and set forth the roles and responsibilities of positions within this Division. The Ordinance provides the Chief of Police as the Director of Emergency Management and an Emergency Operations Board composed of the Mayor, Chief of Police and all department directors. It provides the Director of Emergency Management ability to appoint an Emergency Preparedness Manager to direct and coordinate development, implementation, and maintenance of the emergency operations plan as chair of the Emergency Management Committee. The Emergency Preparedness Manager also coordinates with outside agencies, provides public education, and organizes the Emergency Operation Center (EOC) during emergencies. In the event of an emergency, the Emergency Operations Board role is to provide policy recommendations to the city council during the emergency and recovery periods and provide direction for the emergency operations plan implementation. The Emergency Management Committee provides staff support to the Emergency Preparedness Manager for the implementation and maintenance of the city's emergency plans. The Ordinance specifies the committee be composed of key city personnel designated by the department directors and include representatives of outside private and volunteer organizations. This Emergency Management Committee is the forum used for hazard mitigation plan creation, review, and updating. See Appendix H for notation from EMC meetings regarding hazard mitigation planning.

Reorganization of Emergency Management Division – Ordinance No. 6428

In 2013, the City passed Ordinance No. 6428, which reflected a reorganization of the Emergency Management Division in to the Public Works Department and named the Public Works Director as the Director of Emergency Management.

Adoption of Critical Areas Ordinance – Ordinance No. 5894

In May of 2005, the city adopted a critical areas ordinance (CAO) to provide for the identification, regulations, and protection for wetlands, streams, wildlife habitat, geologic hazards, ground water protection areas, and flood hazards. Generally, the CAO specifies those site alterations that are subject to regulation, requires the identification of the critical areas pursuant to a critical areas report, and specifies how alteration of critical areas may be allowed to protect the public health, safety, and general welfare. Examples include the requirements that

a geotechnical report be prepared prior to the city authorizing work within geological hazard areas, including landslide, seismic, volcanic and erosion hazard areas.

International Codes Adoption - Ordinance No. 6357

On March 21, 2011, the Auburn City Council adopted Ordinance No. 6357 which adopted the 2009 International codes for the State of Washington inclusive of the International Building Code, the International Residential Code, the Uniform Plumbing Code, the International Mechanical Code, the International Fire Code, International Property Management Code and the Washington State Energy Code (Chapter 15-11 WAC). This adoption incorporates the latest version of the international codes approved by the Washington State Building Code Council.

Formation of Flood Control District – King County Ordinance No. 15728

The City of Auburn is within the King County Flood Control District, which was formed in April 2007 (King County Ordinance No. 15728). The King County Flood Control District is a special purpose government entity created to provide funding and policy oversight for flood protection projects and programs in King County. All nine members of the King County Council oversee the Flood Control District as a Board of Supervisors. A 15-member Advisory Committee made up of citizens and local government officials provides advice to the board. The King County Department of Natural Resources and Parks carries out the approved flood protection projects and programs.

Most of the 500 flood protection facilities of King County were built in the early 1960's and are not built to current standards with many now reaching the end of their useful lives. The King County Flood Control District was created to ensure that sufficient funding is available to address the maintenance, repair, and reconstruction of the region's critical flood protection facilities. The Plan identifies up to $345 million in priority repairs and upgrades, including work on flood containment levees and bank stabilization projects. It also provides for a regional flood warning center and emergency response, flood facility maintenance, public education and outreach, mapping and technical studies, citizen inquiry and public response. Funding limitations in the past have not been sufficient to meet these needs.

The Flood Control District completed repairs to 9,300 lineal feet of Green River levees in five high priority locations in 2008 including the Dykstra and Galli levees in the City of Auburn. As of July 19, 2011, the King County Flood Control District had completed one additional repair on a levee inside the City limits of Auburn, installed Supersacks atop the Green River levees in 2009-2010 due to a short term threat from Howard Hanson Dam, and anticipate constructing the Reddington Levee Extension and Setback Project (currently in design) after 2012.

Upgrades to City Facilities

The City has completed upgrades to several key facilities related to hazard mitigation. In 2010, the Emergency Management staff relocated to a new facility located at 1 East Main Street. The new facility includes office space as well as a dedicated Emergency Operations Center and Training facility. The building is classified for importance factors as a Category IV under the 2006 International Building Code (Table 1604.5). The EOC/Training facility contents were funded with Emergency Management Performance Grant monies, while the facility itself was funded by the City general fund.

In addition, the primary buildings located at the Les Gove Community Campus, which are designated as emergency shelter locations, are all now connected to permanently located emergency generators. This allows the facilities to continue to function in their shelter capacity even during power outages.

Finally, culvert replacement was completed on Peasley Canyon Road, near West Valley Highway in 2009. This replacement increased stormwater flow, reduced flooding problems, and eliminated the threat of catastrophic culvert failure.

StormReady Certification

During 2009, the City worked to meet the requirements to receive the National Weather Service StormReady certification. The certification was initially awarded in January 2010 and the City was recertified in January 2013. StormReady certification requires that a jurisdiction meet several requirements related to preparedness, warning, and response to severe weather events. The program is designed to help ensure the safety of people during severe weather events.

Implementation of CodeRed

In 2006, the City adopted the use of CodeRed technology to serve as an additional alert and warning system within the City. This system allows the City to send notifications of emergencies directly to residents and businesses via phone, cell phone, text message, e-mail, and social media. Use of this system decreases the amount of time it takes to inform people of significant events, such as evacuations and other life safety information.

Planning Process

In addition to the City of Auburn internal organization of the Emergency Management Committee, the City also took part in the King County Regional Hazard Mitigation Plan development process. City staff participated in several public meetings held by King County Office of Emergency Management regarding the plan. Meetings were held on May 18th, June 15th, and July 13th, 2009 to discuss regional goals and strategies for mitigation as well as to report on the status of individual jurisdiction annexes. Coordination meetings were also held as they specifically related to the vulnerability of Howard Hanson Dam upstream on the Green River; an issue that evolved within King County and the Cities of Auburn, Kent, Tukwila, Renton, and Seattle in 2009 and continued through 2012.

The planning process was designed to: (1) result in a plan that is Disaster Mitigation Act (DMA) 2000 compliant; (2) coordinate with state and county plans and activities; and (3) build a network of local organizations that can play an active role in plan implementation. Materials have been prepared by employees of the City of Auburn. Contributions of information have been made by Emergency Management Committee members outside of the city, including employees of Boeing and other major stakeholders. The following is a summary of major activities included in the planning process. A comprehensive timeline can be found in Appendix H.

Phase 1: Getting Started

Starting in early 2007 the City's Emergency Management Committee met and worked on developing mitigation strategies appropriate for the City. Auburn City Code section 2.75

establishes the City's Emergency Management Committee (Appendix D), which consists of representatives of all city departments, the Valley Regional Fire Authority (VRFA) and various outside partners including the Boeing Company, Auburn School District, Green River Community College, Safeway Distribution Center, and Auburn Regional Medical Center. After identification of the hazards, vulnerabilities and potential mitigation measures, the City began work on drafting the Hazard Mitigation Plan. Discussions related to the City's Critical Facilities took place at the Emergency Management Committee meetings on the following dates: January 18, 2007, November 7, 2007, January 9, 2008, July 22, 2009, and August 8, 2009. The discussions were about needing lists of critical facilities, when the lists were needed, what constituted critical facilities, what plans the lists were for, when that plan was needed and the working status of the plan.

On August 19, 2009, the City issued a press release announcing the update to the Hazard Mitigation Plan, stating the purpose of the Plan, and inviting comments. A copy of the press release is provided in Appendix B. Simultaneously, the City placed the 2004 Hazard Mitigation Plan on its website for public access. The City also provided an opportunity for the public to review and comment on the plan update during the City's third Annual Community Disaster Preparedness Fair, which took place on September 26, 2009 at the Les Gove Community Campus. Despite this distribution, no public comment was received. A copy of the comment form used for this event is also provided in Appendix B. Developing a more effective means of engaging with the public to receive comment has been identified as an area for improvement in future updates. One idea which has been suggested is to seek comment by using Auburn Emergency Management's positive, active and ongoing relationship with graduates of the local CERT program. Members frequently respond to requests for volunteers, and may be willing to take time to review and comment on Auburn's mitigation plan.

Phase II: Risk Assessment

Phase II of the planning process focused on identifying and understanding the relationship between hazards, vulnerable systems within the community, and existing capabilities. The Emergency Management Committee reviewed existing research concerning the causes and characteristics of potential hazards as well as their probabilities of occurrence and potential impacts. The City also developed and facilitated a "Risk Assessment" meeting. The committee members discussed the City's risks and vulnerabilities to natural hazards and identified mitigation actions to reduce losses from natural hazards.

Risk Assessment Details – The City of Auburn generally agrees with the vulnerabilities stated in the following plans and utilized the data contained in them as a basis for its risk assessment: Regional Hazard Mitigation Plan of King County, King County Flood Control District Hazard Mitigation Plan, and Pierce County Natural Hazard Mitigation Plan. Below is a matrix of hazards addressed by each plan, for comparison purposes.

	WA State HMP (2010)	King Co. HMP (2010)	Pierce Co. HMP (2009)	King Co. Flood Control District HMP (2010)	Auburn HMP (2011)
Natural Hazards					
Avalanche	X	X			X

	WA State HMP (2010)	King Co. HMP (2010)	Pierce Co. HMP (2009)	King Co. Flood Control District HMP (2010)	Auburn HMP (2011)
Drought	X	X	X		X
Earthquake	X	X	X	X	X
Fire Hazards /WUI Fires	X	X	X	X	X
Floods/Flooding	X	X	X	X	X
Landslide	X	X	X	X	X
Severe Weather	X	X	X	X	X
Tsunami (& Seiches, if relevant)	X	X	X	X	X
Volcano /Volcanic	X		X	X	X
Technologic Hazards					
Airport					X
Civil Disorder		X			
Cyberterrorism		X			
Dams/Dam Safety	X	X		X	X
Hazardous Materials	X	X			X
Terrorism		X			
Pandemic	X				
Climate Change	X		X		
Transportation		X			

Figure 4: Comparison of Hazards Addressed Across Plans

City of Auburn Hazard Vulnerability Matrix

Probability of Occurrence: The likelihood that a hazard will affect the City of Auburn
Impacts: Potential effects on the City, such as loss of life or damage to property.

For the purpose of this document, and in accordance with the King County Regional Hazard Mitigation Plan, the criteria for high, moderate, and low probability are:

High Probability: once a year
Moderate Probability: once every two to ten years
Low Probability: once every ten to fifty years. Events occurring once every 50 to 1,000 years will are treated as "low probability" for the purpose of this document.

		Impacts		
		Low	Medium	High
Probability of Occurrence	High	Excessive Heat	Severe Weather Flood Landslide	
	Medium	Seiche		HazMat
	Low	Avalanche[i] Tsunami	Airport Incidents Drought WUI Fire	Dam Issues Volcano Earthquake

[i] While the specific hazards of avalanches and tsunamis are identified within this HMP to maintain consistency with their inclusion in the 2004 HMP, the potential for impacts from avalanches and tsunamis does not warrant assessment of the threat, vulnerability and severity.

Figure 5: Hazard Vulnerability Matrix

Phase III: Developing a Mitigation Strategy, Capabilities, Implementation, Maintenance and Adoption

The Emergency Management Committee also assisted in the development of mitigation actions that seek to reduce the city's vulnerabilities to hazards. The Emergency Management Committee reviewed the city's hazards, ranked the hazards by impact, and identified mitigation strategies that would reduce the impact of natural hazards on our community. Additionally, the Committee discussed a schedule and strategy for continued plan implementation and

maintenance, and developed a list of capabilities specific to the City of Auburn, which would strengthen mitigation activities.

The City Council for Auburn is responsible for adopting the City of Auburn's Hazard Mitigation Plan. This governing body has the authority to promote and establish sound public policy regarding hazards in the City.

Hazard Mitigation Plan Implementation and Maintenance

The Disaster Mitigation Act of 2000 (via the Pre-Disaster Mitigation Program) requires that jurisdictions identify a process for prioritizing potential actions to reduce risk from natural hazards through mitigation planning. Potential mitigation activities often come from a variety of sources; therefore, the project prioritization process needs to be flexible. Emergency Management Committee members, local government staff, public comments, other planning documents, and/or a risk assessment have all identified projects.

Once mitigation actions were gathered for each hazard, staff established evaluation criteria to rank each of the alternatives. The criteria selected included: cost/benefit analysis, available funding, local regulatory requirements, environmental soundness, technological feasibility, and risk reduction. Priorities were numbered according to the greatest cost benefit measure and the highest priority for benefit during disasters. Implementation will be based on prioritization and availability of funding. The City staff used $2.3 million as the valuation of a life saved by public education or construction retro-fitting, etc.

As part of the 2009 update process, previous mitigation initiatives were assessed for completion, impact and relevance. Previous mitigation initiatives such as the addition of generators to pumping stations were completed, while others such as sanitary sewer renewal and replacement programs were found to be insufficiently defined, and thus difficult to assess for progress. Previous initiatives were characterized as follows.

1. Critical Facility Assessment - Well 4 Generator- Scheduled to be completed in 2013.

2. Critical Facility Assessment - Bridge Inspection Program- Undefined

3. Convert City of Auburn Fire Codes from Uniform Fire Code (UFC) to International Building Code (IBC)- Completed.

4. Critical Facility Assessment - Green River Basin Program Flood Control Zone District- Completed.

5. Critical Facility Assessment - Renewal & Replacement Water Program- Undefined

6. Critical Facility Assessment - Sanitary Sewer Renewal & Replacement Program- Undefined

7. Critical Facility Assessment - Renewal & Replacement Storm Drainage- Undefined

8. Critical Facility Assessment - Investigate Replacement and Relocation of Fire Station No. 32- No longer managed by the City as of 1/1/2007, now managed by the VRFA.

Updated mitigation initiatives for the current plan cycle were identified, categorized, defined and prioritized as follows. Members of the Emergency Management Committee scored each initiative, using the same metrics employed in previous version of the plan. The complete ranking matrix for the updated initiatives can be found in Appendix C.

Rank	Department	Project	Hazard	Description
1	Public Works	M&O Building Earthquake Retrofit	Earthquake	Retrofit M&O facility to reduce susceptibility to earthquake damage.
2	Public Works	Reservoir Earthquake Retrofit	Earthquake	Installation of seismic protection valves on City reservoirs to provide for automatic shutoff in event of an earthquake.
3	Information Services	Computer Server Seismic Upgrade	Earthquake	Upgrade computer server racks throughout City to reduce susceptibility to earthquake damage.
4	Information Services	Electronic Archives	Flood/ Earthquake	Purchase and implement software and hardware to comply with the State certification requirements for early destruction of source documents after digitization in compliance with the State of Washington Records Retention laws. This will safeguard records in case of disaster.
5	Public Works	West Hill Storm Pond Rehab	Flooding	Expand and reconfigure stormwater detention ponds on West Hill along S. 296th St. to reduce wintertime flooding along the valley floor below.
6	Planning	Comp Plan Natural Hazards Element	All	Prepare and adopt a new optional Comprehensive Plan element for Natural Hazard Reduction.
7	Police/EM	Target Hardening	Terrorism	Measures to prevent acts of terrorism from occurring at key City facilities (Justice Center, EOC, City Hall, etc.)
8	Planning	City Code - Limit Tree Removal	Landslide	Develop and adopt changes to City Code to limit tree removal within certain sloped or landslide hazard susceptible areas.
9	Emergency Management	Public Education	All	Create part or full-time FTE position to conduct disaster related public education throughout the City.
10	Emergency Management	Data Enhancement Initiative	All	Ability to produce own stats and data capability.
11	Human Services	Home Retrofit Loan Program	Earthquake	Create, fund, and administer a grant or low interest loan program that allows homeowners to retrofit single family homes to protect against earthquakes.
12	Emergency Management	Pandemic Flu Preparedness	Pandemic	Conduct community education campaign to addresses pandemic flu issues (See Public Education also).

Figure 6: Ranked Hazard Mitigation Initiatives

Mitigation Funding

The City of Auburn will continue to provide routine mitigation efforts through existing resources to the greatest extent possible. These include, but may not be limited to: general fund, storm water fund, utility fund, and/or Local Improvement Districts. While the City may fund large or new projects through these same funding sources, it is very likely that the City will need additional resources such as grants, impact funds, low interest loans, and/or levies in order to fund large projects. Without additional sources of revenue, it is likely that many projects will not be feasible. When the initiative is to be paid for by the City, and internal funds are identified, the initiative will be tracked and completed according to internal policies and funding requirements. In other cases, grant funds may be obtained, and implementation will be in compliance with the requirements and provisions of the specific grant.

Mitigation Benefits

Mitigation initiatives undertaken by the City of Auburn are intended to avoid or minimize loss of life or injuries, reduce damage to property, sustain the economy, protect the environment, and ensure the continuity of public services. This is in agreement and compliance with regional goals and strategies.

Relationship with City Plans and Policies

The City of Auburn will integrate the proposed mitigation initiatives, projects, and strategies into current and future City plans and policies by matching initiatives to appropriate planning and policy elements. Specifically, funding of hazard mitigation projects will be evaluated and to the extent feasible, included in the Capital Improvement Program (CIP), annual operating budget, and grant proposals to State and Federal agencies. Auburn will incorporate mitigation actions and policies in the Comprehensive Plan, Zoning Ordinance and Building Codes, and other planning and policy documents as appropriate. Specifically, updates to the Comprehensive Plan now include growth objectives to reduce exposure to flood and landslide hazards, and to protect wetlands and stabilize slopes with vegetation in accordance with Initiative 6- Comprehensive Plan Natural Hazard Element. Hazard mitigation is referenced in the Auburn City Code, and the City has adopted the most recent International Building and Fire codes and worked to recognize hazard planning in future transportation projects in its Comprehensive Transportation Plan . See Appendix E for examples.

Plan Maintenance

The City of Auburn is committed to reviewing and updating this HMP at least once every five years, as required by the Disaster Mitigation Act of 2000 in addition to regular ongoing implementation and monitoring. Following approval of the current plan, the City's Emergency Management Division staff will conduct the following:

- Begin updating this plan in approximately four years, including:
- Contacting King County to seek cooperative efforts during the update process.
- Assessing the current version of the City's HMP in order to determine necessary improvements, including the following:
- Information on completed or initiated mitigation strategies.

- Research and document new hazard information pertaining to Auburn.
- Invite public input for consideration via survey and public council meetings during the update process and comment following the draft plan (prior to plan adoption).
- Discuss hazards, mitigation issues, and available grant opportunities during the regular monthly meetings of the Emergency Management Committee.
- Continue to initiate public involvement whenever the HMP is updated and as appropriate during the monitoring and evaluation process.

National Flood Insurance Program

The City of Auburn has participated in the National Flood Insurance Program (NFIP) since 1989 (Ordinance No. 4357). Auburn is NFIP Community #530073. Auburn's current 100-year and 500-year Flood Prone Areas can be seen in the map below. According to FEMA records, The City of Auburn held 1,509 NFIP policies as of June 2012, with a total premium of $786,440 and a total coverage of $419,033,000. As of June 2012, 10 claims have been paid, with a total amount paid of $43,341. Based on the latest flood plain map proposed by FEMA, there are approximately 345 residential structures & 165 businesses located within the updated FEMA floodplain maps. It is important to note however that the latest proposed maps by FEMA are delayed indefinitely due to a protracted legal process. The 1995 maps continue to be in effect. The City does not have any repetitive loss properties.

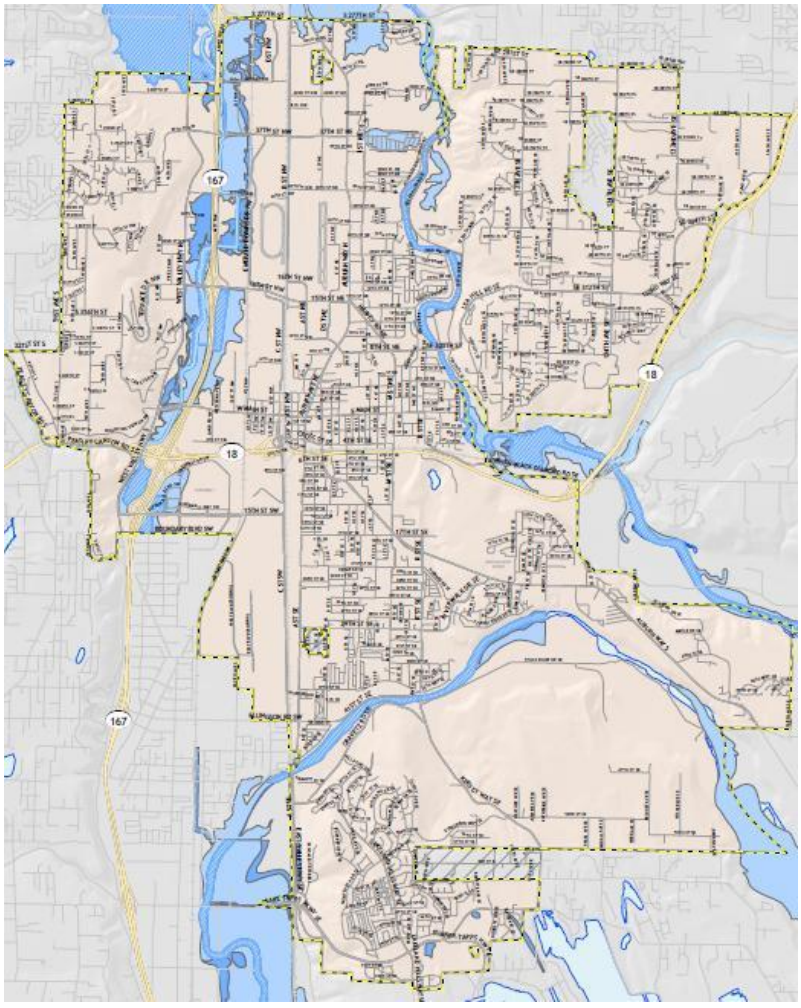


Figure 7: 1995 FEMA Floodplain Map

The City regularly undertakes actions that address administration of the National Flood Insurance Program in Auburn, as outlined in Appendix G. The Director of Planning and City Engineer (Ordinance No. 6295) are charged with administration of the city's program.

The Storm Drainage Utility has a full-time Storm Drainage Engineer, Civil Engineer, Water Quality Program Coordinator, Water Resources Technician, and Storm Drainage Technician who stay current on floodplain requirements through continuing education.

The City's latest Community Assistance Visit (CAV) was conducted on August 30, 2007. The purpose of the CAV was to assure enforcement of the City's flood-related codes and ongoing eligibility for the National Flood Insurance Program (NFIP). The issues identified in the visit included concurrency of the floodplain regulations, procedures for implementing the regulations, and information needed to complete the Field Inspection Report. Subsequently, the city enacted changes to its floodplain regulations by Ordinance No. 6161 on February 19, 2008, refined procedures for implementing the regulations, and provided surveys or as-built construction drawings of completed development projects to demonstrate conformance for the Field Inspection Report. The City received acknowledgement of continuing conformance on January 18, 2008.

The City's vulnerability to flooding yields important information, and underscores the value of the planning process. Since 2004, as part of the national Map Modernization Program, the Federal Emergency Management Agency (FEMA) has produced Preliminary Digital Flood Insurance Rate Maps (DFIRMs) and Flood Insurance Study (FIS) for the incorporated and unincorporated areas of King County. Once revision is complete, these maps will revise the extent of the Green River floodplain in the City. The draft maps indicate a larger and deeper 100-year floodplain area than the maps that are currently in effect. FEMA hosted four meetings in October and November of 2007 to provide an opportunity for citizens in the cities to become familiar with new preliminary mapping and its role as the primary regulatory tool used under the National Flood Insurance Program (NFIP). During the meetings a FEMA representative provided information on the NFIP, the significance of the preliminary maps, and the formal appeal process. Since the DFIRM maps have not been finalized, the 1995 maps remain in effect from a regulatory standpoint, based on City code.

In September 2008, a Biological Opinion issued by the National Marine Fisheries Service (NMFS) determined that the NFIP causes jeopardy to Puget Sound salmonids and Southern Resident killer whales listed under the Endangered Species Act (NMFS, 2008). In response to the Biological Opinion, the City of Auburn instituted a moratorium on all development located in the floodplain per the FEMA maps currently in effect (Resolution No. 4416). The resolution establishing the moratorium required that applications for development within floodplain areas may be approved if the applicants meet FEMA and NMFS requirements for providing adequate protection to endangered species.

On April 5, 2010, the City of Auburn approved interim floodplain regulations (Ordinance No. 6295; City of Auburn, 2010) which replaced the city's previous floodplain regulations and repealed the moratorium. The regulations incorporated federal habitat protection requirements and created a new floodplain development permit to replace the previous flood zone control permit. By letter from FEMA dated September 21, 2011 the City received confirmation that the City's floodplain regulations comply with the FEMA model ordinance; effectively removing the interim status. The changes include requiring new developments to prepare a habitat impact assessment which must include one of the following:

- A Biological Evaluation or Biological Assessment that has received concurrence from USFWS or NMFS; or
- Documentation that activity fits within Section 7 or Section 10 of the ESA; or
- An assessment prepared in accordance with Regional Guidance for Floodplain Habitat Assessment and Mitigation, FEMA Region X, 2010.

In response to Federal Emergency Management Agency (FEMA) release of Draft Federal Insurance Rate Maps (DFIRM), King County and the cities of Auburn, Kent, Renton and Tukwila (appellants) commissioned NW Hydraulics Consultants, Inc. to analyze and map the 100-year floodplain for the area. The report was submitted to FEMA for their consideration during the public appeal period on the draft floodplain maps. At the time of this publication, the appellants expect that the DFIRM maps for the planning area will be changed in the future to more closely reflect the NW Hydraulics Consultant's study and that ultimately the City of Auburn will adopt the revised maps in lieu of the DFIRM maps. The timing of FEMA's completion of DFIRM review is uncertain. Future construction projects in the City include modifications to or increasing the height of levees with the addition of levee setbacks. This will have significant impacts on the future FIRM data and maps.

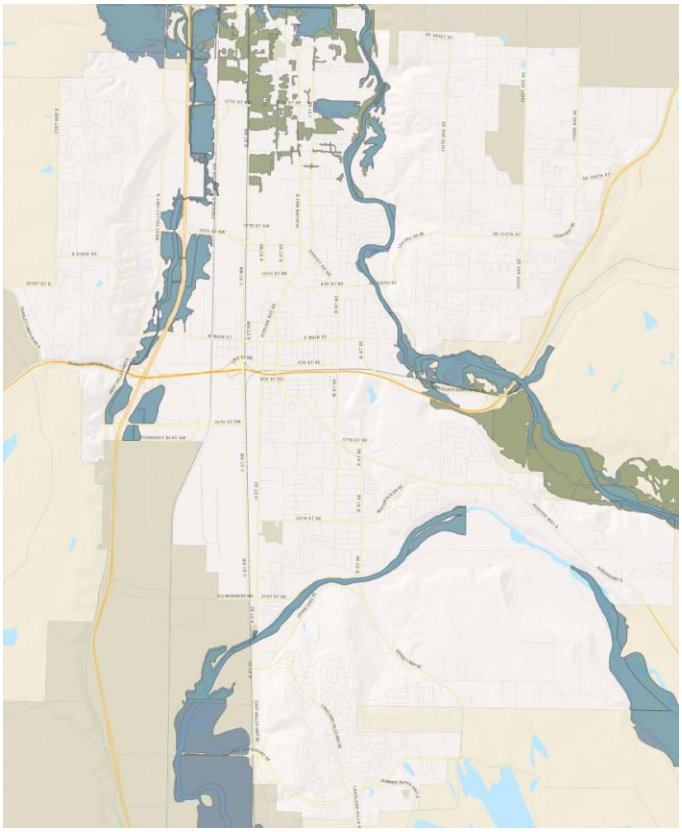


Figure 8: FEMA Special Flood Hazard Areas, Existing (blue) and Proposed (green)

On August 3rd, 2012 the City of Auburn completed a GIS analysis to determine exposure of structures in the 1995 flood maps. (Appendix I) The map that was produced shows a total of 314 structures located in the Green River and Mill Creek SFHA/Floodways, including 275 residential, 20 Commercial and 19 Other/unclassified. No structures were identified in the White River floodplain. Only structures larger than the City's 200 square foot building permit threshold have been identified, so that sheds and temporary structures were not included. Floodplain structure identification is based on aerial photo interpretation using 2007 photo and has not been field verified. The map does not reflect FEMA Letter of Map Revision due to Fill (LOMR) No. LOMR-F-96-10-235A, which removed several commercial parcels/structures south of SR 18 from the floodplain in 1997. The City's mapping analysis to determine the extent of those changes is currently ongoing and unavailable for this update.

The City provides educational outreach through publications provided to residents and information posted on the city's website. The city also provides flood protection assistance in response to inquiries.

The Community Rating System (CRS) is a voluntary program for NFIP participating communities and provides incentives in the form of insurance premium discounts for policyholders within the communities that go beyond the minimum floodplain management requirements. The City of Auburn has a class 5 rating. All participating communities meeting minimum standards enter the CRS with a class 10 rating (which provides no discount). Subsequent class reductions are equal to a five percent discount; therefore the City's Class 5 rating denotes a 25% discount.

Significant Disaster Events

The City has experienced a number of significant storms and disaster events since the last plan update. Though many of these events resulted in Presidential Disaster Declarations, not all did. As a result, records of the exact damages and values vary.

Date	Incident	Impacts on the City of Auburn	Value
Nov 2-11, 2006	Severe storms /floods/landslides/ mudslides Presidential Disaster Declaration 1671-DR-WA	Caused downed trees, closed or blocked streets, blocked storm drains, and required emergency generators at seven sewer lift stations. The City provided press releases and website announcements about shower and emergency shelter locations, waived permit fees for damage repairs, and collected storm debris at no charge.	$26,362
Dec 14-15, 2006	Severe winter storms/wind/ landslides/mudslides Presidential Disaster Declaration 1682-DR-WA	Severe weather downed trees, damaged buildings, and caused widespread power outages. Additional staff, contracted work, and equipment required. Emergency road clearance actions for emergency vehicle passage and traffic control for emergency road were necessary. Fire Agency implemented procedures for a high volume of requests for service. Several city-owned facilities, fences, an electrical pedestal, and six roadside guardrails were damaged. Roadside guardrails were damaged. Cleanup and debris removal continued through April.	$75,860
Jan 5-16, 2007	Windstorm, snowstorm, cold weather	The City was subjected to back-to-back storms, resulting in some minor wind damage, minor snow removal response, and the establishment of a severe weather overnight shelter for the homeless. The shelter was operated by volunteers.	No unusual expenses reported.
Jul 9-11, 2007	Excessive Heat	A brief period of unusually warm weather occurred during this time. The City operated a cooling center for those who might not have other places to go. A power outage in the downtown core occurred as well, knocking out power to the hospital, which declared an internal disaster. The City provided mutual aid to the hospital.	No unusual expenses reported.
Oct 18, 2007	Windstorm	Downed trees, blocked storm drains, closed or blocked streets, sewer lift stations on emergency generators, power outages. Minor damage to some facilities.	No unusual expenses reported.
Dec 1-7, 2007	Severe storms and flooding Presidential Disaster Declaration 1734-DR-wa	Weather event resulted in water over roadways at 37th Street NW, A Street SE, West Valley Highway, and 116th Avenue SE. Various roadways were closed and parking lots were flooded.	$3289
Dec 12, 2008 to Jan 5, 2009	Severe winter storm, record and near-record snow Presidential Disaster Declaration DR-1825-WA.	Winter storm resulted in record and near record snowfall and ice. Road conditions created an immediate threat to public health and safety as roads were impassable to emergency vehicles. City staff plowed snow from streets, spread traction sand and salt and de-iced city streets. City activated warming center and volunteer labor was used to	$71,092

Date	Incident	Impacts on the City of Auburn	Value
		activate and staff the shelter.	
Jan 6-16, 2009	Severe winter storm, landslides, mudslides, and flooding Presidential Disaster Declaration 1817-DR-WA	Minor flooding impacts due to heavy precipitation: flooded roads, parks, golf course. Multiple sinkholes and minor to moderate landslides. Debris removal from the A and R Street bridges on the White River. Channel of the White River was altered, causing washout upstream of A Street. Sewer system damage, causing sewage backup into homes, necessitating temporary relocation of residents. Provided mutual aid to City of Pacific due to extensive flooding there. This storm caused damage to the Howard Hanson Dam, which controls the Green River. This caused ongoing emergency protective actions, including placement of emergency protective measures as well as extensive planning both internally and with partner agencies. Problem ongoing at time of publication.	Initial expenses $ 87,851. Ongoing expenses total nearly $4 Million.
Jul 28-31, 2009	Excessive Heat	A brief period of unusually warm weather occurred during this time. The City operated two cooling centers for those who might not have other places to go.	No unusual expenses.
Jul 8-9, 2010	Excessive Heat	A brief period of unusually warm weather occurred during this time. The City operated two cooling centers for those who might not have other places to go.	No unusual expenses.
Nov 22-23, 2010	Snowstorm	Due to freezing temperatures and snow, the City opened a severe weather overnight shelter for the homeless, operated by volunteers.	No unusual expenses.
Dec 8-18, 2010	Rain Event	Heavy rains throughout the area caused minor flooding and one moderate landslide on private property. The private property owned incurred significant expense.	$1500
Jan 11-21, 2011	Severe winter storm, flooding, landslides, and mudslides. Presidential Disaster Declaration DR-1963-WA.	A severe winter storm brought heavy rain to the area, elevating the level of the Green River. A large sinkhole opened near the river, damaging sidewalk, roadway, and a City pump station. Minor flooding occurred in a City park, as well as the backyards of a mobile home park, where sandbagging efforts were required. Severe weather shelters for the homeless were also opened multiple nights in this timeframe.	$93,954

Figure 9: Significant Disaster Events

Jurisdictional Hazards

Drought

Definition
Drought is an extended period (usually one or more seasons) of abnormally low precipitation. In Washington State, the statutory criteria for drought is that the water supply for a geographical area or for a significant portion of a geographical area is below 75% of normal and the water shortage is likely to create undue hardships for various water uses and users.

Extent
Drought is a spatially expansive hazard, therefore if Auburn is affected it is assumed that drought conditions would be seen across much of Western Washington or over an even wider area.

Probability
Assessing the probability of drought conditions in the City of Auburn can be challenging, due to the marine influence and temperate weather nature of our Puget Sound region. As a result, current long-range forecasts of drought have limited reliability. Meteorologists do not believe that reliable forecasts are attainable any more than a season in advance. Based on the history of drought conditions in Western Washington, probability is indicated as Low.

Vulnerability
The City's multiple water supply sources and its wholesale and emergency interties with adjacent water purveyors potentially assists in reducing the impacts to the City from drought. However, since drought conditions cover large geographic areas, and because water is an important factor for agriculture and hydroelectric power generation, impacts such as higher food and utility prices associated with drought will be felt more strongly by populations with limited income. Elderly and infants are also more susceptible to the direct and indirect effects of drought, particularly during periods of excessive heat.

History
Washington State has experienced a number of drought episodes, including several that lasted for more than a single season – 1928 to 1932, 1992 to 1994, and 1996 to 1997, and 2001. The most recent severe droughts in King County occurred in 1997 and 2001. The 1997 event set records for low precipitation, snow pack and stream flow totals that still stand today, while the 2001 event was the second worst drought year in state recorded history. Rainfall for Western Washington during the 2001 water year was approximately 30% below normal. Subsequently in 2005, King County activated a Drought Response Plan in response to low precipitation, low snow pack, and low river levels.

High levels of water consumption by residents and businesses in Auburn have not coincided with these drought events in 1997, 2001 and 2005 suggesting that either the conditions varied by location within the County and the effects in Auburn were not as severe, or conservation measures were instituted or voluntarily observed and served to reduce the level of consumption.

The City of Auburn declared Stage I water emergencies in both 2009 and 2010 in response to anticipated water shortages. Voluntary water use reductions were encouraged throughout the City and efforts were successful, eliminating the need to declare a Stage II emergency.

Mitigation
The City's 2009 Comprehensive Water Plan recognizes the potential for drought and provides for a Water Shortage Emergency Response Plan. It sets forth procedures for a five-stage response to a drought emergency that ensures customer's essential needs are met and that available water supplies are equitably distributed.

Stage I – Anticipated Water Shortage – Internal Preparations. The Public Works Department shall conduct public education efforts regarding the benefits and necessity of conservation by the public. The Public Works Department initiates coordination with other utilities for delivery of emergency water supply through emergency interties.

Stage II – Serious Water Shortage – Voluntary Conservation. The Public Works Department shall conduct an intensified public information campaign and shall coordinate the campaign to encourage voluntary water conservation through news releases and other methods of providing information about conservation methods. The Public Works Department evaluates the need to accept delivery of emergency water supply through emergency interties.

Stage III – Critical Water Shortage – Limited Outdoor Restrictions. The Mayor may declare a Stage III water emergency when a water shortage exists such that water supplies are critically impacted and water demand must be reduced. The Mayor is authorized to establish certain specified days or hours for irrigating, sprinkling or watering lawns and gardens, and may prohibit or regulate other nonessential uses of water within the water system during such times as there is an actual or impending water shortage, extreme pressure loss in the distribution system, or for any other reasonable cause.

Stage IV – Emergency Water Shortage – Mandatory Outdoor Restrictions and Indoor Conservation. The Mayor may declare a Stage IV water emergency when a water shortage exists such that maximum flow reduction is immediately required, water available to the City is insufficient to permit any irrigation, watering, or sprinkling, and all available water is needed solely for human consumption, sanitation, and fire protection.

Stage V – Regional Disaster – Water Rationing. Water shortage exists such that water rationing must be implemented and emergency water distribution may be necessary for customers without water.

Excessive Heat

Definition
Excessive Heat is categorized as periods of significantly higher than average temperatures, most commonly seen during the summer months.

Extent
Conditions of high heat are typically short term and cover a smaller area compared to a true drought. Microclimatic fluctuations allow for conditions of extreme heat to be limited to a regional extent, although it is possible that broader areas may be affected. In the Seattle area, daytime temperatures that reach into the 90s or greater are considered a problem, particularly when nighttime temperatures do not drop below the 60s.

Probability
Conditions of excessive heat occur on average at least once per year, typically during the months of July and August. Because of this regularity, probability is rated as High.

Vulnerability
Typically there are no structural vulnerabilities associated with excessive heat, however, according to the National Weather Service, an average of 3-4 fatalities occur in the greater Seattle area each year due to excessive heat. Most fatalities are indirectly caused by physical stress factors including heart attacks, strokes, and respiratory illness. The most vulnerable people tend to be the elderly, as well as infants and children up to 4 years of age. Individuals with mobility impairments are also vulnerable, as they may not be able to access cooling shelters operated by the City. Excessive heat can also lead to water emergencies within the City, as defined under Drought.

History
Since the National Weather Service converted the Seattle area to the new Excessive Heat Watch/Warning system in 2005, the City of Auburn has experienced three Watches or Warnings. No heat related deaths have been reported in the City during this time frame.

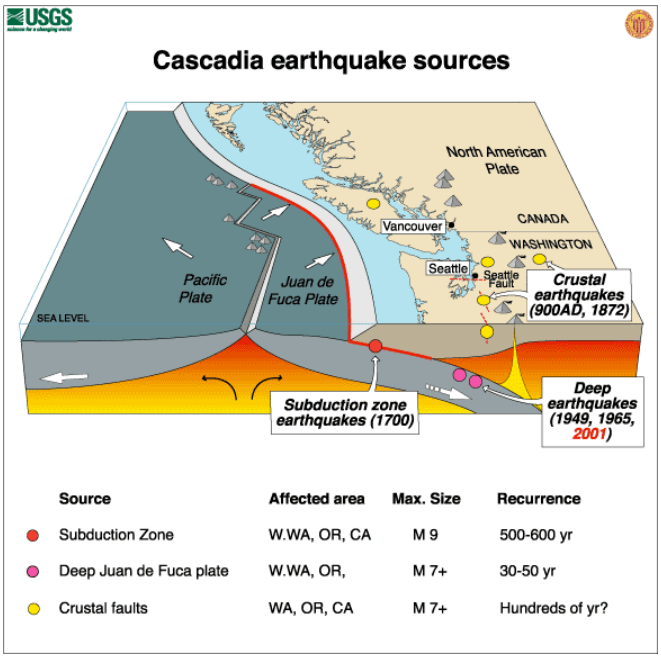
Mitigation
The National Weather Service has developed an Excessive Heat Watch/Warning system that tailors excessive heat guidance to specific regions of the country. This system is based on not only heat and humidity, but on mortality statistics that correlate with other periods of excessive heat.

Beginning in 2007, the City began to offer "cooling centers" for those who might suffer in Excessive Heat conditions. When the National Weather Service issues an Excessive Heat Advisory or Excessive Heat Warning, the City makes air conditioned public facilities available to all who seek to escape the heat.

Earthquake

Definition
An earthquake is the sudden release of stored energy in the earth's crust or between two continental plates that produces a rapid displacement on a fault and radiate seismic waves. Occasionally, large earthquakes produce very strong ground shaking. It is this strong shaking and its cascading consequences – ground failure, landslides, liquefaction – that damages buildings and structures and upsets the regional economy.

Extent
Auburn, as part of the Puget Sound region, is at a convergent margin between two tectonic plates of the Earth's crust. Two



Earthquake source zones for Washington with maximum earthquake magnitude and estimated recurrence time.
(http://geomaps.wr.usgs.gov/pacnw/pacnweq/pdf/subd_eqpg.pdf)

Figure 10: Cascadia Earthquake Sources

converging plates create a complicated system of three distinct earthquake source zones; the Cascadia subduction zone (produces great earthquakes approximately every 500 years), the Benioff (or Deep) Zone (the area near the Juan de Fuca plate that subducts beneath North America and the most frequent source of damaging earthquakes for Puget Sound); and the Crustal Zone. Since 2000, geologists have discovered over 12 active crustal faults in Puget Sound, but few are documented in other parts of the state.

Probability
The City of Auburn is identified as a high peak ground acceleration value with a 2% chance of exceeding that value due to seismic activity within 50 years. Catastrophic events have never been observed, thus probability is Low.

Vulnerability
The central portion of Auburn contains river valley alluvial soils where groundwater tables are generally high, which creates the potential for seismically induced liquefaction and ground failure. This portion of the City occurs within an identified seismic hazard area. Such areas known to have this type of seismic risk are subject to building codes that specify the use of construction techniques to allow structures to withstand damage from liquefaction. However, all development in the floor of the Green River Valley is built upon relatively loosely consolidated soils deposited by pre-historic lahar events like the Osceola mudflow (see Volcano). This means that the level of damage to buried utilities, roads, and buildings will be high compared to areas constructed on more compact soils. Underground utilities fail more readily in liquefiable soils, so it is assumed that the repair of utilities and restoration of service will take longer after an earthquake with significant ground shaking. Road surfaces will also experience greater damage in liquefaction zones. Between damaged transportation routes and damage water utilities, fire fighting and other emergency response efforts may be compromised for many areas following a major event. Previously standing agreements for aid with other jurisdictions may be compromised by the regional scale of certain earthquake events, particularly a strong Seattle or Tacoma fault event, or a subduction zone event. Routes of ingress for aid may be disrupted by bridge failure along I-5, road failures in liquefiable zones, and disruption of port facilities which are often constructed on liquefiable fill and are at low sea levels vulnerable to tsunami.

History
Washington, especially the Puget Sound basin, has a history of relatively frequent damaging earthquakes. The State has experienced at least 20 damaging events in the last 125 years. Large earthquakes in 1946 (magnitude 5.8), 1949 (magnitude 7.1) and 1965 (magnitude 6.5) killed 15 people and caused more than $200 million (1984 dollars) in damage throughout several counties. The Nisqually earthquake on February 28, 2001 is the most recent damaging earthquake. The 6.8 magnitude earthquake caused extensive damage to residences, especially masonry chimneys, as well as superficial & structural damage to older masonry buildings along the south side of West Main Street of Auburn in the downtown core. Damage was also reported at City Hall. The exact dollar figure loss is unknown, but according to electronic records of requested permits, the loss to private parties is estimated to be approximately $100,000.

300 years ago on January 26th, the northwest region experienced a Cascadian subduction zone event. Although an earthquake 300 years ago predates United States settlement of the West Coast and thus any formal records, strong evidence has been tabulated from multiple sources. Physical evidence has been found in soil layers, and is corroborated by accounts from northwest Native American tribes. Normally, the date range for earthquakes based solely on soil evidence and verbal accounts would not be enough to pinpoint a specific date. However, Japanese records note a significant Tsunami hit the east coast of Japan in the same timeframe

posited for the Cascadian earthquake, giving a more specific date marker for the event. The recent Japanese subduction zone earthquake and subsequent tsunami that took place on March 11th, 2011 serves as a modern analog for what may happen in the Puget Sound region. However it is also theorized that structural vulnerabilities are greater here and thus the impacts may be stronger.

Mitigation

The City of Auburn has taken a variety of steps to mitigate potential damage from Earthquakes. Chief among these steps has been the adoption of the International Building Code, including seismic standards appropriate for the greater Puget Sound region. Earthquake retrofits have been completed on some key facilities and all facilities occupied by people have been reviewed for earthquake safety hazards.

Flood

Definition
Flooding in King and Pierce Counties occurs primarily when large, wet and warm weather systems occur in the Cascade Mountains and after snow packs have accumulated. The combination of melting snow runoff and added precipitation fills rivers within hours and usually builds over one to three days. For this reason, most flooding occurs in the winter months, typically from November through February. Flooding frequently affects the low position in the landscape and thus is more likely to affect the valley floor portion of Auburn and when occurring at higher elevations it is usually near streams and rivers.

Extent
Flooding occurs primarily along the Green and White rivers, with arterial flooding occurring in various low elevation areas throughout the City. River flooding is controlled by upstream dams on both the Green and White rivers, so significant flooding is only expected to occur during high precipitation events that force dam operators to increase the spill flow to avoid over-topping. In accordance with King County, The City of Auburn measures flood levels in cubic feet per second (cfs). Because both the Green and White Rivers are mitigated by flood control dams, cfs is useful for indicating the output below the dams. Minor flooding from the Green River is expected to begin at flow levels above 9000 cfs. Levee failure could begin occurring at around 14,000 cfs. Areas along the river channel will be affected at low levels of flooding, but much of northern Auburn is susceptible to inundation at higher flood stages. Flooding peaks with heavy rain events, but once precipitation ceases there is a lag period while groundwater drains and floodwaters recede. The White River hits minor flood stage at 8,000 cfs, but no there are no expected impacts at this stage for Auburn. The neighboring City of Pacific will see stronger impacts associated with the White River.

Probability
Minor street flooding related to clogged storm drains happens on a nearly annual basis, although the additional protection provided by the Howard Hanson and Mud Mountain dams strongly mitigates against major river flooding. The combination of periodic arterial flooding and rarer alluvial flooding make the probability Medium.

Vulnerability
Flood vulnerability associated with the Green River is considered low to moderate, because of the flood control effects of the Dam. If a moderate to severe flood were to occur along the Green

River, approximately 10,000 residents might be directly impacted, along with more than 400 businesses. A flood of the Green River would have a significant economic impact on not just the City, but the entire region, predominantly for neighboring cities along the Green River.

The vulnerability associated with the White River is much lower compared to the Green River. If a flood were to occur within the City limits due to the White River, impacts would be primarily to City owned parks, with a very limited number of residences and businesses in the flood path.

History

Green River - Howard Hanson Dam

In January 2009, a large storm required that water levels behind Howard Hanson dam be raised to their highest level ever. As the water levels subsided, damage was found on the right abutment of the dam, prompting an immediate restriction on the capacity of the dam until the exact nature of the damage could be determined and repaired. The capacity of the dam was restricted to approximately 30% of it's designed capacity. This capacity reduction created a risk of flooding in the Green River Valley that was as high as 1:3 at one point. Subsequent repair work has restored the dam back to its original levels of risk reduction as of October 2011.

White River - Mud Mountain Dam

The City of Auburn experienced minor flooding in 2006 and 2009 as a result of excessive precipitation, loss of White River channel capacity and water releases from Mud Mountain Dam. During operations in November 2006, the Army Corps of Engineers passed outflows of 11,700 cubic feet per second (cfs) from Mud Mountain Dam.

Mitigation

The Howard Hanson and Mud Mountain dams provide strong mitigations against alluvial flooding. Howard A. Hanson Dam is a U.S. Army Corps of Engineers flood control dam located near the headwaters of the Green River in King County. The dam is located approximately 30 miles upstream of Auburn. Its primary purpose is flood control in the winter and fish enhancement in the summer. Because the dam is located in a closed watershed supplying water for the City of Tacoma, public access is not permitted. The dam was dedicated in 1962. The dam is 450 feet high and 960 feet thick at the base. Its storage reservoir is 7 miles long, and can store 106,000 acre-feet of water. The dam has a concrete-lined spillway and concrete outlet tunnels. With the dam in place and fully functioning, the annual probability of flooding in the City of Auburn due to the Green River is approximately 1:140.

Mud Mountain Dam is a U.S. Army Corps of Engineers flood control dam and recreation facility on the White River near Mt. Rainier on the King /Pierce County border. The dam is approximately 26 miles upstream of Auburn. The Mud Mountain Dam was completed in 1948 and was built to prevent massive flooding in South King County and North Pierce County, which used to occur almost annually. Its reservoir contains water filled with glacier flour, which gives the White River its appearance and name.

This earth fill dam is 432 feet high and 1,600 feet thick at the base. Its storage reservoir is 5.5 miles long, and can store 106,000-acre-feet of water. The core of the dam is sand and gravel, and the entire structure is covered with a 3-foot layer of quarry rock to protect against rain wash. The dam has a concrete-lined spillway and two concrete outlet tunnels. The dam is built with 2.3 million cubic yards of sand, rock, and gravel. Although water has never spilled over the top, an

extra nine feet were added in 1991. Modifications have been made to the dam to improve safety and to protect salmon runs. As of the year 2000, it is estimated that the dam has prevented more than $300 million in flood damages.

In addition to flood control provided by the two dams, The City of Auburn has engaged in a number of flood related mitigation activities since the last plan update. The most significant of these was the City participation and support of the King County Flood Control District, which is specifically charged with making improvements along levee systems throughout the County. Auburn has directly benefited from District activities, with projects having been completed on multiple sections of the Green River levee.

Prior to the resolution of issues along the Green River related to Howard Hanson Dam, the City embarked on an aggressive public education campaign related to flooding hazards and flood risks. As a result, local participation in the National Flood Insurance Program increased significantly during 2009.

Landslide

Definition

The term landslide includes a wide range of ground movement, such as rock falls, deep failure of slopes, and shallow debris flows. Ground failures that result in landslides occur when gravity overcomes the strength of a slope. While gravity is the primary reason for a landslide, there can be contributing factors, including:

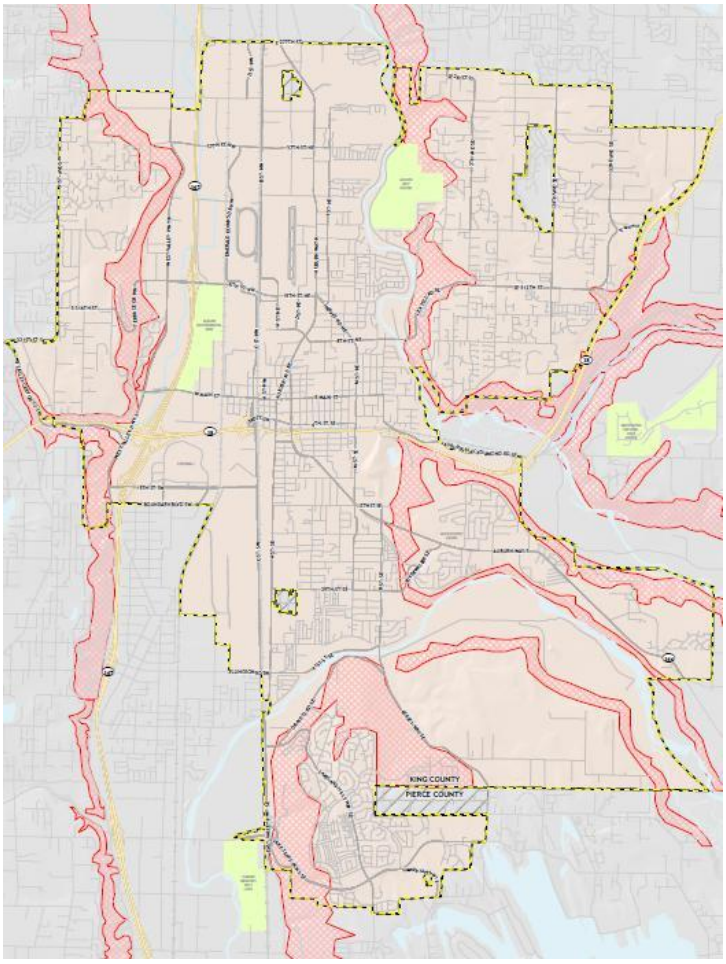


Figure 11: Landslide Hazard

- Saturation, by snowmelt or heavy rains, that weaken rock or soils on slopes.
- Erosion by rivers, glaciers, or ocean waves that create over-steep slopes or remove support from the base of the slopes.
- Ground shaking caused by earthquakes greater than magnitude 4.0 that destabilize slopes.
- Volcanic eruptions that produce loose ash deposits and debris flows.
- Excess weight, from accumulation of rain or snow, from stockpiling of rock or ore, from waste piles, or from manmade structures, that stress weak slopes.
- Human action, such as construction, logging, or road building that disturbs soils and slopes.

Extent
Landslides are most likely to occur where certain combinations of geologic formations are present. For example, groundwater can accumulate and zones of weakness can develop when layers of sand and gravel lay above less permeable silt and clay layers. In the Puget lowland, for example, this combination is common and widespread; glacial outwash, often esperance sand or gravel, overlies the fine-grained Lawton Clay or Whidbey formation. The City of Auburn has areas of steep slopes. These are located in the east, west, and southeast portions of the City that rise from the valley floor

Probability
Several small landslides are recorded each winter. Landslide occurrence typically follows heavy rain events on an annual basis, but it is not guaranteed that if severe weather occurs that landslides will absolutely follow. The probability of landslide hazards has not changed from the 2004 plan, and is still rated as High.

Vulnerability
During severe weather, earthquakes, or volcanic eruptions, areas indicated in Figure 11 may be subject to landslides and/or soil displacement. Residents who are dependent on landslide prone transportation routes such as West Valley Highway, Peasley Canyon Road, Lea Hill Road SE and Kersey Way SE may be forced to take circuitous routes to and from home, or may be isolated if no other routes are available. Landslides are a compounding vulnerability since they typically accompany severe weather and earthquakes, both of which cause utility outages and road closures.

History
There is no official history of landslides for the City of Auburn, though evidence of past landslides can be seen on many hillsides. Typically, the City will experience at least one minor slide every winter, usually causing no greater damage than a short-term road closure while debris is cleared.

Mitigation
Mitigation efforts related to Landslide hazards have centered around land clearing and grading regulations and land use planning and zoning regulations. Adoption of the Critical Areas ordinance has been key to these efforts.

Severe Weather

Definition
Severe weather can include above average amounts of rain, snow or ice, extreme temperatures, high winds, and thunderstorms. Severe winter weather is often accompanied by heavy rains and flooding conditions.

Probability
With a substantial marine influence, the climate of King County is well known for its moderation. Despite this, severe weather in King County and the City of Auburn can happen at any time of year. Unusual rain, snow, ice, extreme cold and high winds usually occurs between October and April. However, severe weather can also occur in summer months attributable to heat and storms. Overall the probability is high.

Extent
Auburn's average annual snowfall is 8.6 inches per year and the average annual rainfall is 38.48 inches per year. Storm systems categorized as severe weather are expected to cover the entire city and beyond, although impacts will be specific to location. Most severe weather systems last a few hours to a few days.

Vulnerability
The effects of severe weather in the City of Auburn can include flooding, power outages, land and mudslides, and road, rail, and airport closures. Heavy local snows have resulted in power outages, transportation restrictions, and economic impacts. There is limited snow removal equipment or budget associated for such service in the City of Auburn or within King County. Vehicles and drivers are often poorly equipped to travel roadways under such conditions. For this reason, impacts from unusually heavy snowfalls and severe winter conditions tend to be dramatic though short-lived. Populations with special transportation needs, including commuters and other individuals who require regular assistance from outside sources are readily vulnerable to severe weather. Elderly and homeless populations are highly vulnerable to cold temperatures.

Conditions in the City can also be compounded by severe weather in other locations. The December 2007 storm was accompanied by heavy snow in the mountains, which closed all of the mountain passes for an extended period. At the same time that I-5 was closed in Lewis County due to flooding. For a period of several days, the entire Puget Sound region was cutoff from its normal transportation and supply routes. Some grocery stores in Auburn ran out of essential items, while some gas stations in the City were unable to get regular fuel deliveries. Though this was not a usual occurrence, it is likely that a similar set of circumstances could occur in the future.

History
The last major wind-related events for the City were in December 2006 and October and December 2007. The 2006 storm resulted in power outages that lasted for several days in small sections of the City. The 2007 storm resulted in minor power outages throughout the City, but most were resolved within 24 hours. As a result of the wind there were downed trees and limbs strewn across streets throughout the city. The probability of these future events is the same as the county and would be experienced city-wide.

At the beginning of 2009, winter storms resulted in record and near record snowfall and ice. Road conditions created an immediate threat to public health and safety as roads were impassable to emergency vehicles. City staff plowed snow from streets, spread traction sand and salt and de-iced city streets. The City activated a warming shelter and volunteer labor was used for staffing. .

The Puget Sound area is subject to severe storms on a regular basis and Auburn is no exception. Every winter the region experiences high winds that down trees and cause power outages. The most well-known event was the Inaugural Day Storm in 1993. The City lost power as a result of high winds and downed trees. The downtown core was without power for approximately 1.5 days, and portions of the City did not recover power for nearly 3 days. The City reported $500,000 in damage as a result of that storm.

Mitigation

Recognizing that these types of storms primarily impact life safety, as opposed to infrastructure, the City has focused on public education and response planning to mitigate the effects of severe weather. NOAA weather radios have been placed in all City facilities and the City was awarded NWS StormReady status in 2010 and 2013. In 2006, the City invested in CodeRed, an emergency alert and warning system that delivers life safety messages to city residents and businesses via phone, cell phone, text message, e-mail, and mobile applications. An aggressive public education campaign was conducted in 2009 and 2010 to encourage people to be prepared for these types of events. The City, in partnership with the Auburn Food Bank, also operates overnight shelters for homeless populations, and warming centers during the day during these types of events.

Volcano

Definition

The Cascade Mountain Range of the Pacific Northwest has more than a dozen active volcanoes. These familiar snow-clad peaks are part of a 1,000 mile-long chain of mountains, which extend from southern British Columbia to northern California. Cascade volcanoes are predicted to erupt explosively, and have occurred at an average rate of 1-2 per century during the last 4,000 years. An associated phenomenon is a lahar. A lahar is a type of mudflow composed of pyroclastic material and water that flows down slope from a volcano, typically along a river valley.

Probability

Mt Rainier has not shown signs of increased activity, and has not shown any major activity in greater than 100 years, thus probability is Low.

Extent

As population increases in the Pacific Northwest and Auburn, areas near volcanoes are being developed and recreational usage is expanding. As a result, more people and property are at risk from volcanic activity. Auburn is potentially within the path of a lahar, should a significant eruption occur, but given the infrequent nature of this hazard, it is difficult to determine an exact measure of vulnerability. The extent of lahar flow is more predictable in that river valleys are common paths, but the exact extent and path of a lahar is difficult to predict in advance. The interference from the built environment further complicates predicting whether a lahar could reach Auburn. In terms of warning time, if a lahar were to travel down the Green River, it would reach Auburn in approximately 2 hours. Ash and tephra dispersal from a volcanic eruption will depend on prevailing wind patterns and the energy of the eruption. Disruptions caused by ash will likely affect a broad geographical area.

Vulnerability

There are virtually no research or observations available regarding the impact that lahars of this magnitude might have on a modern suburban environment. There is a high degree of certainty however that if a lahar large enough to reach Auburn were unleashed from Mount Rainier, there would direct impacts to the people and to the built environment. Individuals who cannot self-evacuate are highly vulnerable to volcanic eruptions which generate a lahar capable of reaching Auburn, due to the relatively short evacuation timeframe. Individuals with asthma or other chronic respiratory illnesses may be vulnerable to the ash generated by an eruption. Under certain wind and ash distribution conditions, interstate and air traffic may be disrupted,

increasing the vulnerability of people dependent on medications supplied by just-in-time inventory systems.

History

Seven Cascades volcanoes have erupted during the last 200 years. Four of those eruptions would have caused considerable property damage and loss of life had they occurred today without warning. The most recent event was Mt. St. Helens, which even with considerable warning resulted in loss of life. The volcano posing the most significant risk to Auburn is Mount Rainer, which sits approximately 40 miles southeast of the city limits. The greatest threat to Auburn associated with volcanic activity is a lahar (mudflow).

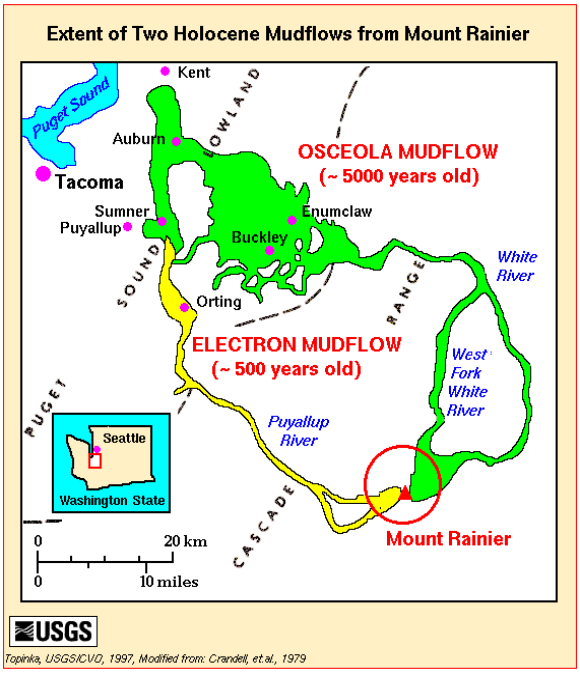


Figure 12: Historical Mudflows (lahars)

In approximately 3600 B.C., the summit of Mount Rainier collapsed, most likely due to magma forcing its way into the volcano. The landslide removed the top 2,000 feet, leaving a crater. This created a massive avalanche of rock and mud, known as the Osceola Mudflow, traveling faster than 20 feet per second, which destroyed everything in its path. Native American legends allude to this fact. The mudflow shot through canyons and valleys, and over small hills, until the debris reached as far as modern-day Kent.

Before the mudflow, the salt waters of Puget Sound covered what would later become the Duwamish and Green River Valleys. In some areas, the Duwamish Valley was hundreds of feet deeper than it is today. Aboriginal peoples lived south of the inlet, and up on the surrounding plateaus. Evidence of human encampments buried beneath 75 ft of mud have been found near Enumclaw.

A smaller mudflow from Mount Rainier, the Electron Mudflow, occurred approximately 500 years ago. This sent mud flowing through the Puyallup Valley, but not to the extent of the Osceola Mudflow

Mitigation

In 2006, the City established a lahar evacuation plan and posted volcano evacuation signs in areas of the City that might be subjected to lahar evacuations. These signs direct the route to high ground, above the presumed highest potential levels of the lahar flow. USGS volcano monitoring also acts as an early-warning system to prepare the City for the possibility of evacuation.

Figure 13: Volcano Evacuation Sign

Wildland/Urban Interface Fire

Definition
A wildland/urban interface (WUI) area is the geographic area where structures and other human development meets or intermingles with wildland or vegetative fuels. A wildland/urban interface fire is a fire located in that geographic area. There are several locations within Auburn where structural developments meet and intermingle with the wildland areas. This condition gives rise to the possibility of WUI fires especially when weather conditions are dry and fuels are abundant.

Probability
The large scale burning cycle in western Washington is every 100 – 150 years. However, smaller fires can happen during particularly dry years or periods of extreme heat. Incremental development has resulted in an increased urban area interfaced with wildland area, increasing the chance of fire reaching the City.

Probability of fire increases significantly during drought phases, as more vegetation dries out and becomes prone to ignition, but under normal conditions probability is Low.

Extent
Available fuels (vegetation and other combustible materials), winds and slope gradient are contributors to the speed in which a wildland fire spreads. The type of vegetation which grows on the west-side of the Cascade Mountain Range is different than that which grows on the east-side, where wildland fires more commonly impact urban areas. However, the west-side vegetation has the potential for tremendous energy release when it does burn. It is a heavier and denser fuel source than the vegetation found on the east-side. While the wet climate helps to inhibit fires from starting in the first place, the denser fuel load burns longer and is more difficult to control if a fire does break out. The result is a hire magnitude event sustained over a large area, likely beginning along the east side of Auburn where vegetation is heaviest.

Vulnerability
Home building in and near forested lands creates the interface and therefore increases the risk of interface fires. Often, structures in interface areas have been built and maintained with minimal consideration given to protection from exterior fire starts, or the need to minimize interior fires from spreading to forested lands. Many homes are built with an effort to maintain the scenic aspects of the surrounding area. Frequently there is little clearance of vegetation resulting in a lack of defensible space. Personal vulnerabilities are similar to those caused by a regular house fire- individuals with special transportation requirements may need help evacuating the area, and the reduction in air quality from heavy smoke cover may be problematic for people with asthma and other chronic respiratory illnesses.

History
To date, there have been no wildland/urban interface fires in Auburn.

Mitigation

In 2007, the Valley Regional Fire Authority was formed, combining the previous Auburn and Pacific Fire Departments, also providing service to the City of Algona. The creation of this new entity allowed for substantially more resources to be dedicated to fire safety education and

awareness, as well as to additional equipment, staff, and facilities. A new fire station has been built in the southeastern area of Auburn most likely to see an interface fire.

Technological Hazards

Dam Issues

Definition
A dam failure threat is any threat relating to the safety and operation of the Howard Hanson, Mud Mountain,Lakeland South Pond, Take Youngs Reservoir or Lake Tappsdams, ranging from seepage or inability to regulate flow to complete failure.

Probability
Prior to seepage issues found on the Howard Hanson Dam in 2009, there have been no issues resulting in a change to odds of flood occurrence since the dams were completed. Probability is considered Low.

Extent
In addition to the previously mentioned Mud Mountain and Howard Hanson Dams, (See Flooding) the City is directly responsible for the Lakeland South Pond dam. This dam is a storm detention pond, which meets the State classification for a dam. As a result, the City is required to complete and maintain an action plan for failure of this dam. There is one home identified as being in the flood path should this dam fail.

Vulnerability
See Flooding

History
See Flooding

Mitigation
Since the dams themselves exist as mitigations, use of the CodeRed warning system is the only other mitigation related to dam issues that the City uses.

Auburn Municipal Airport Events

Definition
The City of Auburn operates a General Aviation airport as a self-funded enterprise. The airport provides fuel service from above ground storage tanks with 12,000 gallon capacity. There are approximately 377 aircraft based at the Auburn airport and about 149,000 operations (takeoffs and landings) occur annually. The majority of the aircraft located at the airport are single-engine airplanes. About 60 percent of the airport activity is attributed to general transient aviation, 36 percent is local general aviation, four percent is air taxi services, and less than one percent is military activity. The airport provides hanger and tie down rental, aircraft charter, aircraft rental, repair stations, and pilot training. Potential hazards related to the airport include terrorist actions, hazardous materials, fuel releases and accidents.

Probability
To date there have been no major hazard incidents at the airport, thus probability is Low.

Extent
The airport itself is a primary risk site for direct accidents, hazardous materials release from fuel storage, or targeted terrorist attacks. However, aviation accidents from aircraft on approach or departing from the airport broaden the extent to surrounding jurisdictions.

Vulnerability
The airport serves a unique role as the only pure general aviation airport in an urban area remaining in the region. It is also one of the busiest general aviation airports in the state. Long-term disruptions to airport activity could result in economic losses for Auburn. Aircraft accidents are potentially fatal to both the passengers on the aircraft and anyone in the vicinity of the crash site, but because of the specificity of the hazard it is difficult to calculate what populations are more vulnerable.

History
January 1-3, 2004 the airport was closed during an ice storm. In January of 2009, minor damage to airport storm drains was caused by Green River flooding.

Mitigation
The City's 2000 Auburn Municipal Airport Master Plan contains an assessment of the existing facilities and recommendations for upgrades and improvements.

Hazardous Materials Release

Definition
Hazardous Materials include any substance which can cause notable damage to people, the environment, or property. Typically a release event would be from industrial or transportation accidents, although purposeful releases through terrorism or emergency venting of chemicals to prevent a larger scale catastrophe can occur as well.

Probability
Because hazardous materials release is a broad category, probability is difficult to calculate. While major events that pose a serious risk to human life are rare, minor events such as gasoline spills are more common. Accounting for both major and minor events, probability is rated as Medium.

Extent
Hazardous materials move through the Auburn region on highways, rail lines, and pipelines and are stored in fixed facilities throughout the City. Each facility that uses hazardous materials is required to maintain plans for warning, notification, evacuation, and site security under various regulations. Release of hazardous materials can happen at either a source point such as a production facility or during transportation. This limits exposure for most chemical releases to major transportation routes and facilities which use, produce, or dispose of hazardous materials. However, broader contamination is possible if the hazardous material is gaseous or volatile, or is spilled near a secondary means of conveyance such as a storm drain. The Burlington Northern Santa Fe Railway, the Union Pacific Railway, Small & Sons, Inc., Cenex, Inc., Ferrellgas, Inc., Boeing, Inc., and areas nearest the Williams Pipeline represent the highest risk for hazardous materials release.

Vulnerability
Rating vulnerability can be challenging for hazardous materials release, since the range of possible emergencies is dependent on what chemical is released. In general, people that are more physically sensitive to the presence of contaminants will be more vulnerable, notably children and seniors, and individuals with pre-existing sensitivities to aerial contaminants such as those with asthma or other chronic respiratory ailments. Individuals living near to major transportation routes or sites which use hazardous materials are also more vulnerable based on their proximity to possible sources of exposure.

History
Tracking the history of hazardous materials releases is difficult, as many go unreported or are too minor to warrant immediate response. Large or dangerous releases, which must be reported immediately, are uncommon. The most serious event in recent history was a toxic cloud accidentally released from Boeing in 1995, which required the evacuation of 12 buildings and resulted in a number of hospitalizations, though no fatalities or serious injuries.

Mitigation
The City of Auburn does not have a Local Emergency Planning Committee (LEPC) dedicated to hazardous materials and continues to rely on the King County LEPC for related issues. In addition, Boeing maintains a Level A Hazmat response team trained for any events that may happen at their facility. If a release occurred at Boeing, their internal resources will be the best equipped to function as primary responders for events relating to their facility. If a release occurs outside of Boeing's explicit jurisdiction, their Hazmat response team is available upon request to assist in other incidences.

Appendices

Appendix A – Critical Facilities List

CONFIDENTIAL: NOT FOR PUBLIC DISCLOSURE
Fields left blank if information is unavailable

Annex A: "Critical Facilities List" is exempt from public disclosure pursuant to RCW 42.56.420. Requests for public disclosure of this document, or parts thereof, should be referred immediately to the City of Auburn Legal Department.

Distribution of this document beyond the intended party is prohibited unless authorized in writing in advance by the City of Auburn City Attorney or Designee.

Appendix B – Public Engagement

Press release

City of Auburn Seeking Comments on Hazard Mitigation Plan
FOR IMMEDIATE RELEASE: August 19, 2009
Contact:
Sarah Miller, Emergency Preparedness Manager
253-876-1909
skmiller@auburnwa.gov
AUBURN, Wash. - August 19, 2009 - The City of Auburn is seeking public comment on the Auburn Annex to the King County Regional Hazard Mitigation Plan. As required by law, the City is undertaking a required 5 year update to the plan. Comments must be submitted by Sept. 10 to Sarah Miller, Emergency Preparedness Manager.

The plan is designed to identify hazards that exist throughout the county and to identify efforts that can be taken to lessen the impact of those hazards within the City.

The Auburn Annex to the King County Regional Hazard Mitigation Plan can be accessed via the City's website at www.auburnwa.gov/disaster or by contacting the Emergency Management Division at 253-876-1925.

Comments can be submitted via e-mail to skmiller@auburnwa.gov or via regular mail to Emergency Management, 340 E Main St., Suite 201; Auburn, WA 98002.
# # #
City of Auburn Emergency Management
340 East Main Street, Suite 201
Auburn, WA 98002
253-876-1925

Citizen Survey

Questionnaire #1 – Hazards

City you reside in: _____

How concerned are you about the following hazards affecting your community? *(Place an X in the corresponding column for each hazard)*

Natural Disasters	Extremely Concerned	Very Concerned	Concerned	Somewhat Concerned	Not Concerned
Avalanche					
Climate Change					
Dam					
Drought					
Earthquake					
Flood					
HAZMAT					
High Winds					
Landslide / Ground Failure					
Public Health					
Severe Winter Storm					
Tsunami					
Volcanic Eruption/Lahar					
Wildfire					
Other:					

Rationale for adding hazards above:
Why are you concerned or not concerned about particular hazard(s)? Please explain.

Other comments you would like to make:

Questionnaire #2 – Mitigation Strategies

A number of activities can reduce your community/organization risk from hazards. These activities can be both regulatory and non-regulatory. An example of a regulatory activity is a policy that limits or prohibits development in a known hazard area such as a floodplain. An example of a non-regulatory activity would be to develop a public education program to demonstrate steps citizens can take to make their homes safer from hazards.

Place an X in the column that best represents your opinion of each of the following strategies.

Community-wide Strategies	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Not Sure
I support a regulatory approach to reducing risk.						
I support a non-regulatory approach to reducing risk.						
I support a mix of both regulatory and non-regulatory approaches to reducing risk.						
I support policies to prohibit development in areas subject to natural hazards.						
I support the use of tax dollars (federal, state and/or local) to compensate landowners for not developing in areas subject to natural hazards.						
I support the use of local tax dollars to reduce risks and losses from disasters.						
I support protecting historical and cultural structures.						
I would be willing to make my home or business more disaster resistant.						
I support steps to safeguard the local economy following a disaster event.						
I support improving the disaster preparedness of local schools.						
I support a local inventory of at-risk buildings and infrastructure.						

If you *Strongly Agree* with any of the strategies listed above, please explain why. Provide an explanation for each.

If you *Disagree* or *Strongly Disagree* with any of the strategies listed above, please explain why. Provide an explanation for each.

How should limited mitigation funding be used? On specific hazards (if so, please identify the hazard(s))? On specific strategies (if so, please identify the strategies)? In any other ways (please explain)?

Which mitigation strategies would you like to see implemented in your community or by your organization (please identify and explain why)?

Which mitigation strategies seem to work in your community or for your organization (please identify and explain why)?

Which mitigation strategies do not seem to work in your community or for your organization (please explain)?

Which groups should the state work with to reduce hazard losses (please identify)?

You are also invited to provide comments on our existing Hazard Mitigation Plan. It may be viewed at http://www.auburnwa.gov/disaster.

Appendix C – Mitigation Initiative Ranking Matrix

Rank 1: Rank based on total score.
Rank 2: Rank based on average score

Department	Project	Hazard	Description	**Rank 1**	IS	BLDG	Safeway	Parks Maint	VRFA	PD	Admin	M&O	Parks Admin	Finance	PW	Total	Avg	**Rank 2**
Public Works	Earthquake Retrofit	Earthquake	Retrofit M&O facility to reduce susceptibility to earthquake damage.	**1**	3	0	2	1	3	2	1	2	4	4	1	23	2.3	**1**
Public Works	Earthquake Retrofit	Earthquake	Installation of seismic protection valves on City reservoirs for provide for automatic shutoff in event of an earthquake.	**2**	1	3	1	9	1	1	4	1	2	1	2	26	2.36	**2**
Information Services	Seismic Upgrade	Earthquake	Upgrade computer server racks throughout City to reduce susceptibility to earthquake damage.	**3**	2	8	4	2	4	3	2	5	1	2	4	37	3.36	**3**
Information Services	Electronic Archives	Flood/ Earthquake	Purchase and implement software and hardware to comply with the State certification requirements for early destruction of source documents after digitization in compliance with the State of Washington Records Retention laws. This will safeguard records in case of disaster.	**6**	4	4	7	12	6	4	3	7	9	5	11	72	6.55	**4**
Public Works	Storm Pond Rehab	Flooding	Expand and reconfigure stormwater detention ponds on West Hill along S. 296th St. to reduce wintertime flooding along the valley floor below.	**7**	5	1	5	10	13	8	8	11	3	6	6	76	6.91	**5**
Planning	Haz Nat Element	All	Prepare and adopt a new optional Comprehensive Plan element for Natural Hazard Reduction.	**5**	7	0	6	7	10	7	5	8	7	10	5	72	7.2	**6**
Police/EM	Target Hardening	Terrorism	Measures to prevent acts of terrorism from occurring at key City facilities (Justice Center, EOC, City Hall, etc.)	**8**	10	10	9	11	2	13	10	4	6	3	9	87	7.91	**7**
Planning	Tree Limit Removal	Landslide	Develop and adopt changes to City Code to limit tree removal within certain sloped or landslide hazard susceptible areas.	**9**	8	2	10	8	11	11	6	9	10	9	4	88	8	**8**

Department	Project	Hazard	Description	**Rank 1**	IS	BLDG	Safeway	Parks Maint	VRFA	PD	Admin	M&O	Parks Admin	Finance	PW	Total	Avg	**Rank 2**
Emergency Management	Public Education	All	Create part or full-time FTE position to conduct disaster related public education throughout the City.	**10**	11	6	12	6	7	6	12	6	12	11	7	96	8.73	**9**
Emergency Management	Enhancement Initiative	All	Ability to produce own stats and data capability.	**4**	0	0	0	5	9	10	0	10	11	8	10	63	9	**10**
Human Services	Loan Program	Earthquake	Create, fund, and administer a grant or low interest loan program that allows homeowners to retrofit single family homes to protect against earthquakes.	**11**	13	9	11	13	5	9	9	12	8	7	3	99	9	**11**
Emergency Management	Pandemic Flu Preparedness	Pandemic	Conduct community education campaign to addresses pandemic flu issues (See Public Education also).	**12**	6	11	8	14	8	12	11	0	13	12	12	107	10.7	**12**

Appendix D – Emergency Management Committee Members

First Name	Last Name	Title	Organization
Randy	Bailey	M&O Manager	City of Auburn, Public Works Department
Yvette	Barnett	Emergency Preparedness Coordinator	The Boeing Company
Martin	Chaw	Financial Planning Manager	City of Auburn, Finance Department
Debbie	Christian	Executive Director	Auburn Food Bank
Matt	Counas	Director of Engineering and Plant Operations	Multicare Auburn Medical Center
Fred	Creek	Director of Security	Green River Community College
Dani	Daskam	City Clerk	City of Auburn, City's Clerk's Office
Jeff	Dixon	Principal Planner	City of Auburn, Planning & Development Department
John	Fletcher	Employee Relations/Compensation Manager	City of Auburn, Human Resources Department
Mike	Gerber	Assistant Fire Chief	Valley Regional Fire Authority
Steven	Gross	Assistant City Attorney	City of Auburn, Legal Department
Chris	Heminger	Captain	Valley Regional Fire Authority
Dana	Hinman	Public Affairs Manager	City of Auburn, Mayor's Office
Previously: Rick Hopkins Vacant as of 7/2012		Building Division Manager	City of Auburn, Planning & Development Department
Bob	Karnofski	Assistant Police Chief	City of Auburn, Police Department
Heather	Kitchen	Emergency Management Assistant	City of Auburn, Office of Emergency Management
Bob	Lee	Police Chief	City of Auburn, Police Department
John	Lobdell	Supervisor - Warehouse, Grounds, Print Shop & Safety	Auburn School District
Ada	McDaniel	Emergency Management Coordinator	Muckleshoot Indian Tribe
Mike	Miller	Parks Maintenance Manager	City of Auburn, Parks Department
*Sarah	Miller	Emergency Preparedness Manager	City of Auburn, Office of Emergency Management
Brian	Petty	Recreation Manager	City of Auburn, Parks Department
Kirsten	Reynolds	Project Assistant	City of Auburn, Community Services Division
Colin	Schmalz	Network Communication	City of Auburn, Information

		Engineer	Services Department
Dennis	Selle	City Engineer/Asst. Public Works Director	City of Auburn, Public Works Department
Terry	Swanson	Security/LP Manager	Safeway, Inc.
Denis	Uhler	Director of Supply Chain Management	Auburn Regional Medical Center
	Vacant	Police Chief	City of Pacific

*****Pursuant to Auburn City Code 2.75, the Emergency Preparedness Manager is the Chair of the Emergency Management Committee.

Appendix E – Mitigation Supported by Comprehensive Plan

The Auburn Comprehensive Plan provides numerous references to mitigating and avoiding construction in hazardous areas. The following sections provide the most relevant examples of mitigation practices. The full comprehensive plan may be viewed at http://www.auburnwa.gov/business/planning_development/comprehensive_plan.asp

Comprehensive Plan Objective 19- To minimize the risk from environmental and manmade hazards to present and future residents of the community.

Discussion: Natural and manmade hazards exist in the Auburn area which can threaten the health, safety and property of Auburn residents and businesses. Some of these hazards include flooding, landslides, earthquakes, volcanic activity and waste materials. The City will seek to limit the exposure of the residents and businesses of this community to these hazards

Objective 19.1.

To reduce potential hazards associated with flood plains without unduly restricting the benefits associated with the continued development of the Lower Green River Valley floor.

EN-57 The City shall seek to protect human health and safety and to minimize damage to the property of area inhabitants by minimizing the potential for and extent of flooding or inundation.

EN-58 Flood prone properties outside of the floodway may be developable provided that such development can meet the standards set forth in the Federal flood insurance program.

EN-59 Any subdivision of property within the flood plain shall avoid creating lots which would be subject to serious threats to life, health and property from floodwaters.

EN-60 Site plan review shall be required under SEPA for any significant (e.g. over the SEPA threshold) development in the flood plain. Appropriate mitigating measures shall be required whenever needed to reduce potential hazards.

EN-61 Any development within the floodway which would reduce the capacity of the floodway shall be prohibited.

EN-62 The City shall enact ordinances and review development proposals in a manner which restricts and controls the discharge of storm water from new development. At a minimum the peak discharge rate after development shall not exceed the peak discharge rate before development.

EN-63 The City's development standards should require control and management of storm waters in a manner which minimizes impacts from flooding.

EN-64 The City shall consider the impacts of new development on frequently flooded areas (Map 9.5) as part of its environmental review process and require any appropriate mitigating measures. As part of this review process, flood engineering and impact studies may be required. Within FEMA designated 100 year floodplains and other designated frequently flooded

areas, such mitigation may include flood engineering studies, the provision of compensatory flood storage, floodproofing of structures, elevating of structures, and downstream or upstream improvements.

EN-65 Areas designated as frequently flooded areas should include 100 year future condition floodplains wherever future condition flows have been modeled and adopted by the City as part of a basin plan.

EN-66 Land uses and public and quasi-public facilities which would present special risks, such as hazardous waste storage facilities, hospitals, schools, nursing homes, and police and fire stations, should not be constructed in designated frequently flooded areas unless no reasonable alternative is available. If these facilities are located in designated frequently flooded areas, these facilities and the access routes needed for their operation, should be built in a manner that protects public health and safety during at least the 100 year flood. In addition, special measures should be taken to ensure that hazardous or toxic substances are not released into flood waters.

EN-67 Developers in floodprone areas shall provide geotechnical information which identifies seasonal high groundwater elevations for a basis to design stormwater facilities in conformance with City design criteria.

EN-68 The Mill Creek Basin Flood Control Plan, when completed, shall be the basis for the establishment of downstream drainage conditions for development in that area.

Objective 19.2.

To ensure that development is properly located and constructed with respect to the limitations of the underlying soils and subsurface drainage.

EN-69 The City shall seek to ensure that land not be developed or otherwise modified in a manner which will result in or significantly increase the potential for slope slippage, landslide, subsidence or substantial soil erosion. The City's development standards shall dictate the use of Best Management Practices to minimize the potential for these problems.

EN-70 Where there is a high probability of erosion grading should be kept to a minimum and disturbed vegetation should be restored as soon as feasible. The City's development standards shall dictate the use of Best Management Practices for clearing and grading activity.

EN-71 The City shall consider the impacts of new development on hazards associated with soils and subsurface drainage as a part of its environmental review process and require any appropriate mitigating measures.

EN-72 Large scale speculative filling and grading activities not associated with a development proposal shall be discouraged as it reduces a vegetated site's natural ability to provide erosion control and biofiltration, absorb storm water, and filter suspended particulates. In instances where speculative filling is deemed appropriate, disturbed vegetation shall be restored as soon as possible, and appropriate measures to control erosion and sedimentation until the site is developed shall be required.

EN-112 Developments in shoreline areas that are identified as geologically hazardous or pose a foreseeable risk to people and improvements during the life of the development should not be allowed.

Objective 21.6

Flood Hazard Reduction

EN-118 The City should manage flood protection through the City's Comprehensive Drainage Plan, Comprehensive Plan, stormwater regulations, and flood hazard area regulations.

EN-119 Discourage development within the floodplains associated with the City's shorelines that would individually or cumulatively result in an increase to the risk of flood damage.

EN-120 Non-structural flood hazard reduction measures should be given preference over structural measures. Structural flood hazard reduction measures should be avoided whenever possible. When necessary, they should be accomplished in a manner that assures no net loss of ecological function and ecosystem-wide processes. Non-structural measures include setbacks, land use controls prohibiting or limiting development in areas that have are historically flooded, stormwater management plans, or bioengineering measures.

EN-121 Where possible, public access should be integrated into publicly financed flood control and management facilities.

EN-73 The City shall consider the impacts of new development on Class I and Class III landslide hazard areas (Map 9.7) as part of its environmental review process and require any appropriate mitigating measures. The impacts of the new development, both during and after construction, on adjacent properties shall also be considered.

EN-74 Auburn will seek to retain areas with slopes in excess of 40 percent as primarily open space areas in order to protect against erosion and landslide hazards and to limit significant removal of vegetation to help conserve Auburn's identity within the metropolitan region. Slopes greater than 15 percent with zones of emergent water (springs or ground water seepages) and all slopes with mapable landslide potential identified by a geotechnical study shall be protected from alteration.

EN-75 The City will require that a geotechnical report prepared by a professional engineer licensed by the State of Washington with expertise in geotechnical engineering be submitted for all significant activities proposed within Class I and Class III landslide hazard areas. The City shall develop administrative guidelines which identify the procedures and information required for the geotechnical reports.

EN-76 New development within Class I and Class III landslide hazard areas shall be designed and located to minimize site disturbance and removal of vegetation, and to maintain the natural topographic character of the site. Clustering of structures, minimizing building footprints, and retaining trees and other natural vegetation, shall be considered.

Objective 19.3.

To reduce risks associated with the transportation and storage of hazardous materials.

EN-77 The City shall seek to minimize the exposure of area inhabitants to the risk of explosion or hazardous emissions, and to require proposals involving the potential risk of an explosion or the release of hazardous substances to include specific measures which will protect the public health, safety and welfare.

EN-78 The risk of hazardous materials, substances and wastes shall be incorporated into the City's emergency management programs.

EN-79 New commercial (other than retail commercial) or industrial uses which involve the transport or storage of hazardous materials, substances or wastes shall only be located in that portion of the designated Region Serving Area of the City between the Burlington Northern Railroad tracks and east of the West Valley Highway.

EN-80 Any existing wholesale storage or manufacturing of hazardous materials, substances or wastes in the designated Community Serving Area of the City, or within 2000 feet of a school or medical facility, shall be considered a non-conforming use and the City should assertively seek its removal.

EN-81 The treatment, storage, processing, handling and disposal of any hazardous material, substances or wastes shall be only in the strictest compliance with any applicable local, state or federal law.

EN-82 The City shall consider the impacts posed by new development on risks associated with hazardous materials, substances and wastes as a part of its environmental review process and require any appropriate mitigating measures.

EN-83 The Local Hazardous Waste Management Plan for Seattle/King County, and the King County Solid Waste Interlocal Resolution No. 90-001, are hereby adopted and incorporated as an element of the City of Auburn Comprehensive Plan.

EN-84 The City's surface water, ground water, sanitary, and storm drainage systems shall be protected from contamination by hazardous materials or other contaminants.

EN-85 Use or removal of existing underground storage tanks shall only be done in the strictest compliance with applicable local, state and federal law.

Appendix F- Mitigation Supported by Auburn City Code

The Auburn City Code, including the Critical Areas Ordinance section, extensively delineate geologic and flood hazards, as well as mitigation standards for critical areas. The following sections are to be used as indication of attention to mitigation in city policy, not as a comprehensive list of all mentions to mitigations found within the entire Auburn City Code. The full code may be viewed at http://www.codepublishing.com/wa/auburn/

Flood Hazards

15.68.030- Flood hazards- Statement of Purpose.

It is the purpose of this chapter to promote the public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas by provisions designed:

A. To protect human life, health, and to protect property;

B. To minimize expenditure of public money and costly flood control projects;

C. To minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;

D. To minimize prolonged business interruptions;

E. To minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, streets and bridges located in areas of special flood hazard;

F. To help maintain a stable tax base by providing for the sound use and development of areas of special flood hazard so as to minimize future flood blight areas;

G. To ensure that potential buyers are notified that property is in an area of special flood hazard;

H. To ensure that those who occupy the areas of special flood hazard assume responsibility for their actions;

I. To qualify the city of Auburn for participation in the National Flood Insurance Program, thereby giving citizens and businesses the opportunity to purchase flood insurance;

J. To maintain the quality of water in rivers, streams, and lakes, and their floodplains so as to protect public water supplies, areas of the public trust, and wildlife habitat protected by the Endangered Species Act;

K. To retain the natural channel, shoreline, and floodplain creation processes and other natural floodplain functions that protect, create, and maintain habitat for threatened and endangered species; and

L. To prevent or minimize loss of hydraulic, geomorphic, and ecological functions of floodplains and stream channels.

Geologic Hazards

16.10.100 Alteration or development of critical areas – Standards and criteria

1. General Standards. The city may approve, condition or deny proposals for the alteration of geologic hazard areas, as appropriate, based on the degree to which the significant risks posed by critical hazard areas to public and private property and to public health and safety can be mitigated. The objective of mitigation measures shall be to render a site containing a critical geologic hazard as safe as one not containing such hazard or one characterized by a low hazard. In appropriate cases, conditions may include limitations of proposed uses, modification of density, alteration of site layout and other appropriate changes to the proposal. Where potential impacts cannot be effectively mitigated or where the risk to public health, safety and welfare, public or private property, or important natural resources is significant notwithstanding mitigation, the proposal shall be denied.

2. Specific Standards.

a. Class IV Landslide Hazard Areas. Alteration shall be prohibited subject to the reasonable use provisions of this chapter.

b. Critical Seismic Hazard Areas.

i. For one-story and two-story residential structures, the applicant shall conduct an evaluation of site response and liquefaction potential based on the performance of similar structures under similar foundation conditions; or

ii. For all other proposals, the applicant shall conduct an evaluation of site response and liquefaction potential including sufficient subsurface exploration to provide a site coefficient (S) for use in the static lateral force procedure described in the International Building Code.

c. When development is permitted in geologic hazard areas by these regulations, an applicant and/or its qualified consultant shall provide assurances which, at the city's discretion, may include one or more of the following:

i. A letter from the geotechnical engineer and/or geologist who prepared the geologic hazard report required by these regulations, stating that the risk of damage from the proposal, both on-site and off-site, are minimal subject to the conditions set forth in the report, that the proposal will not increase the risk of occurrence of the potential geologic hazard, and that measures to eliminate or reduce risks have been incorporated into its recommendations;

ii. A letter from the applicant, or the owner of the property if not the applicant, stating its understanding and acceptance of any risk of injury or damage associated with development of the site and agreeing to notify any future purchasers of the site, portions of the site, or structures located on the site of the geologic hazard;

iii. A legally enforceable hold harmless agreement, which shall be recorded as a covenant and noted on the face of the deed or plat, and executed in a form satisfactory to the city, acknowledging that the site is located in a geologic hazard area; the risks associated with development of such site; and a waiver and release of any and all claims of the owner(s), their directors, employees, or successors, or assigns against the city of Auburn for any loss, damage, or injury, whether direct or indirect, arising out of issuance of development permits for the proposal; and

iv. Posting of a bond, guarantee or other assurance device approved by the city to cover the cost of monitoring, maintenance and any necessary corrective actions.

Mitigation for Critical Areas

16.10.110 Mitigation standards, criteria and plan requirements.

A. Mitigation Standards. Adverse impacts to critical area functions and values shall be mitigated. Mitigation actions shall generally be implemented in the preferred sequence identified in this chapter. Proposals which include less preferred and/or compensatory mitigation shall demonstrate that:

1. All feasible and reasonable measures as determined by the department have been taken to reduce impacts and losses to the critical area, or to avoid impacts where avoidance is required by these regulations;

2. The restored, created or enhanced critical area or buffer will be as viable and enduring as the critical area or buffer area it replaces; and

3. No overall net loss will occur in wetland or stream functions and values. The mitigation shall be functionally equivalent to or greater than the altered wetland or stream in terms of hydrological, biological, physical, and chemical functions.

Appendix G- Duties of the Floodplain Administrator.

Duties of the floodplain administrator are established by section 15.68.141 of the City's Critical Areas Ordiance.

Duties of the floodplain administrator shall include, but not be limited to:

A. Review all floodplain development permits to determine that the permit requirements of this chapter have been satisfied.

B. Review all floodplain development permits to determine that all necessary permits have been obtained from those federal, state, or local governmental agencies from which prior approval is required, including those local, state or federal permits that may be required to assure compliance with the Endangered Species Act and/or other appropriate state or federal laws.

C. Review all floodplain development permits to determine if the proposed development is located in the protected area. If located in the protected area, ensure that the applicable provisions of this chapter are met.

D. Ensure that all development activities within the regulatory floodplain of the city meet the requirements of this chapter.

E. Inspect all development projects before, during and after construction to ensure compliance with all provisions of this chapter, including proper elevation of the structure.

F. Maintain for public inspection all records pertaining to the provisions of this chapter.

G. Submit reports as required for the National Flood Insurance Program.

H. Notify FEMA of any proposed amendments to this chapter.

I. Cooperate with state and federal agencies to improve flood and other technical data and notify FEMA of any new data that would revise the FIRM.

J. Make interpretations, where needed, as to the exact location of the boundaries of the regulatory floodplain, the SFHA and the protected area (e.g., where there appears to be a conflict between the mapped SFHA boundary and actual field conditions as determined by the base flood elevation and ground elevations). (Ord. 6295 § 2, 2010.)

Appendix H: Mitigation Plan Timeline

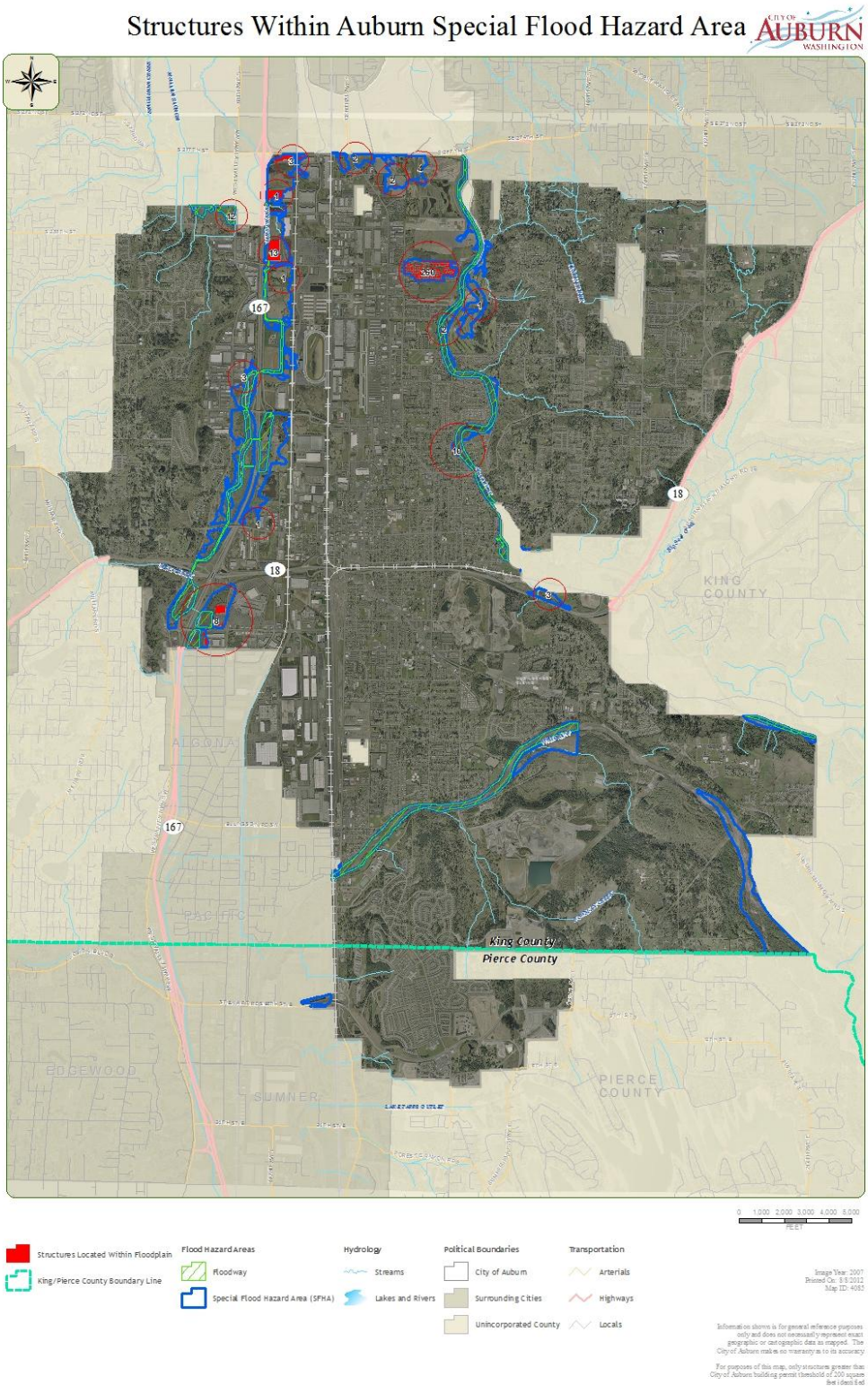
Although considerably more discussion and effort was applied to the review and development of hazard mitigation plan materials, only a small part of discussion was captured in meeting minutes and a few saved emails. Due to issues with the Howard Hansen Dam in 2009, most Emergency Management Committee meetings during 2009 and 201-0 were directed towards dam concerns and updates.

Hazard Mitigation Plan Timeline	
Date	**Activity**
1/1/2007	Valley Regional Fire Authority (VRFA) formed
1/1/2007	COA Emergency Management Division formed as part of Auburn Police Department.
1/18/2007	COA EMC Meeting: critical facilities discussions, HMP update timeline/status
4/1/2007	King County Flood Control District Formed
10/1/2007	Public meetings regarding floodplain changes (not specific to HMP, but relevant to planning)
11/1/2007	Public meetings regarding floodplain changes (not specific to HMP, but relevant to planning)
11/7/2007	COA EMC Meeting: critical facilities discussions, plan update timeline/status
1/9/2008	COA EMC Meeting: critical facilities discussions, plan update timeline/status
1/18/2008	Received NFIP Conformance letter
2/19/2008	COA enacted floodplain changes via Ordinance 6161
9/1/2008	NMFS biological opinion received
4/1/2009	Shoreline Management Program adopted.
5/18/2009	KCOEM Public Meeting: Regional goals and Strategies for Regional HMP.
6/15/2009	KCOEM Public Meeting: Regional goals and Strategies for Regional HMP.
6/17/2009	COA EMC Meeting: critical facilities and mitigation projects. EMC Members to bring comprehensive lists of critical infrastructure and lists of potential mitigation projects.
6/18/2009	List of critical facilities was distributed to EMC members, along with the types of hazards the City should look to mitigate for.
7/13/2009	KCOEM Public Meeting: Regional goals and Strategies for Regional HMP.
7/22/2009	COA EMC Meeting: critical facilities discussions, plan update timeline/status
8/8/2009	COA EMC Meeting: critical facilities discussions, plan update timeline/status
8/18/2009	COA signed commitment letter to KC Regional HMP.
8/19/2009	COA issued press release regarding plan update + website placement
9/26/2009	COA solicited HMP public comments at the annual Disaster Preparedness Fair.
10/1/2009	COA internal communication: decision to switch HMP from a King County Annex to a stand-alone plan due to King County moving forward on an incompatible timeline.
11/1/2009	COA EMC Meeting: Update from J Dixon regarding plan status. Request for feedback on critical facilities, capabilities matrix, and mitigation initiatives.
12/28/2009	Notified by KC that the regional HMP was approved without Auburn's update.
1/15/2010	COA internal review of HMP draft & assignment from Planning Div to EM Intern
1/20/2010	COA EMC Meeting: Discussion of potential mitigation projects and the ranking process.
1/25/2010	COA received StormReady certification
1/25/2010	Draft HMP first submission to WA EMD for review

Hazard Mitigation Plan Timeline	
Date	**Activity**
2/1/2010	COA opened a dedicated EOC and EM offices.
2/9/2010	Attended WA EMD Risk Analysis training to assist in HMP completion.
2/10/2010	COA Department presentations on HMP projects at EMC meeting
2/10/2010	Received NFIP info stating no repetitive loss claims in COA.
3/16/2010	Updated HMP draft received from Intern, based on initial WA EMD review.
4/5/2010	COA adopted interim floodplain regulations.
5/26/2010	Communicated with KC COA's intent to rejoin the Regional HMP.
6/2/2010	COA distributed electronic survey to EMC members for ranking hazard mitigation projects.
6/28/2010	COA participated in KC Regional HMP Planning meeting
7/12/2010	Rotated Draft HMP to 2nd intern for final completion.
9/14/2010	Received final draft from second intern.
10/29/2010	Final input requested from Planning Department.
11/29/2010	Received final input from Planning Department.
12/8/2010	Update to COA EMC on HMP status
1/26/2011	Approved final map revisions for plan inclusion.
2/14/2011	Received final draft HMP from intern in wrong format
3/8/2011	Received final draft in correct format
3/21/2011	COA adopted international building code.
7/19/2011	Conducted final internal HMP draft after map additions and misc updates
8/15/2011	Circulated final draft plan to EMC, KCOEM, and WA EMD for comments and review.
8/17/2011	Confirmed to WA EMD that COA was requesting a review of the plan.
9/21/2011	Received FEMA confirmation that floodplain ordinance is in compliance
10/18/2011	Reconfirmed to WA EMD our request for plan review and learned of need for crosswalk
11/4/2011	WA EMD clarified that plan needs to be approved by FEMA prior to City Council approval.
11/4/2011	Crosswalk submitted to WA EMD.
11/14/2011	Received additional critical facility updates internally.
11/28/2011	Received feedback and revision request from WA EMD.
1/18/2011	Due to large storm, many projects put aside to deal with recovery issues.
3/8/2012	1 staff member and 1 volunteer attended Hazard Mitigation Planning training
3/26/2012	Distributed updated HMP for internal review.
6/1/2012	COA gathered additional information on NFIP policies.
6/20/2012	COA engaged in phone conversation with WA EMD regarding plan questions.
8/3/2012	COA GIS completed analysis of floodplain exposure
8/31/2012	Submitted final plan to WA EMD for review.
9/21/2012	Submitted updated FEMA Plan Review tool to WA EMD.
12/19/2012	Received kickback from FEMA for further revisions.
2/19/2013	Completed final revisions and resubmitted to WA EMD and FEMA.

Appendix I: Structures within Floodplain

Intended as a general overview. For greater detail the actual GIS map can be analyzed by City of Auburn Information Services.



Appendix J: City of Auburn Regional Mitigation Plan Signature Form

Regional Mitigation Plan
Signature Form

I hereby commit the jurisdiction of City of Auburn to actively participating in the Regional Mitigation Plan. I understand that each jurisdiction participating in the Plan is individually responsible for accomplishing the tasks listed below.

- Designate a Point of Contact for this jurisdiction to coordinate mitigation planning efforts.

Sarah K. Miller	skmiller@auburnwa.gov	253-876-1909
Point of Contact	*email address*	*phone number*

- Ensure the governing body of this jurisdiction adopts the Regional Mitigation Plan by local ordinance.

- Contribute at no cost available geographic data necessary to development of the Hazard Identification and Vulnerability Analysis including, but not limited to:
  - land use data
  - development patterns
  - population figures
  - infrastructure systems
  - hazard data

- Develop a Local Mitigation Strategy (LMS) based on the Hazard Identification and Vulnerability Analysis. The LMS will include:
  - a set of mitigation goals specific to this jurisdiction aimed at reducing long-term vulnerability to hazards
  - a list of mitigation projects and actions
  - a description of how projects and actions will be prioritized and implemented
  - Involvement in NIFP compliance
  - Other FEMA required plan components as listed

- Develop a schedule for updating this jurisdiction's LMS and geographic data contained within the Regional Mitigation Plan.

- Incorporate recommendations, policies, and strategies included in the LMS into other local planning tools and methods such as land use plans, Capital Improvements Plans, site review processes, and zoning ordinances.

Signature of Chief Elected Official — Date